Monograph 13

## COINS FROM THE EXCAVATIONS AT SARDIS

THEIR ARCHAEOLOGICAL AND ECONOMIC CONTEXTS
COINS FROM THE 1973 TO 2013 EXCAVATIONS

# Archaeological Exploration of Sardis 

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Editors
Andrew Ramage
Nicholas D. Cahill

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## THEIR ARCHAEOLOGICAL AND ECONOMIC CONTEXTS

COINS FROM THE 1973 TO 2013 EXCAVATIONS

By Jane DeRose Evans

Archaeological Exploration of Sardis
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## Editors' Preface

Sardis, capital of the Lydian empire, is famous as the birthplace of coinage, its most important contribution to the world economy. In this monograph, Jane DeRose Evans presents the 8,000 or so coins dating from the Lydian through the late Roman eras found since 1973 at Sardis. Professor Evans builds on two earlier monographs on coins from the Harvard-Cornell Excavations: the very first Sardis Monograph, M1: Byzantine Coins by George E. Bates, which includes Byzantine coins found in 19581968, and M7: Greek, Roman and Islamic Coins from Sardis by Theodore Buttrey, Ann Johnston, Kenneth MacKenzie, and Michael Bates, which covers coins from the excavations through 1972, excluding those already published by George E. Bates.

With a few notable exceptions, the vast majority of coins from the Sardis excavations are not numismatic treasures, but ordinary small change lost by the city's inhabitants over the course of more than a millennium. Their real value lies in their archaeological contexts, and in the careful work that Jane Evans has done in identifying even the most minute, worn examples which might be passed over by other numismatists as illegible or simply unworthy of study. The coins come from a wide variety of contexts: hoards, burials, ritual contexts, destruction levels, and simple casual losses found in stratigraphically significant fills. The coins not only inform and sometimes date these contexts, but as she demonstrates, the contexts just as often inform and date the coins. Professor Evans thus comes to this study wearing two hats: as an experienced field archaeologist and excavation director with long experience dealing with the complexities of archaeological stratigraphy, and as a numismatist with deep familiarity with the
coinage of Asia Minor, problems in ancient economics and trade, and related questions. Her two chapters, "Excavation Coins as Evidence of the Economy and Trade" and "Archaeological Contexts," reflect this twin focus of her study, while the catalog demonstrates the remarkable range and quantity of her material. She has pored over the publications, reports, fieldbooks, and other records from the excavation, worked closely with the excavators and with specialists on pottery, stratigraphy, and other aspects of the project, and so comes to consider not only the identifications and catalog of the coins, but also a host of more general questions about the circulation of coins in antiquity, and various non-economic behaviors such as ritual deposits, dedications, and funerary gifts.

It should be noted that the study of many of these contexts is ongoing. The author's definitive identifications of the coins are fundamental in further studies of the houses, public buildings, sanctuaries, streets, tombs, and other contexts, and her study in Chapter 2 is based on our best current, but still incomplete understanding of the complex stratigraphy, pottery, and history of the site. Further study will undoubtedly change that understanding; but this is the case with all our endeavors.

Special thanks are due to the many staff members who worked on these coins over the years. Clive Foss served as numismatist from 1973-1975. Among the student numismatists who offered preliminary identifications are Patricia Erhart (1979), Barbara Burrell (1980-1983), Robert A. McCall (1983), Katherine E. Welch (1984, 1986-1987), Barbara A. Baxter (1985), Mary Jane Rein (1988-1989), Richard T. Neer (1990-1991), Anne McClanan (1992), Jennifer

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Trimble (1993), Catherine S. Alexander (1994, 2003), Christopher H. Roosevelt (1995-1998), Tumay Asena (1999), Corinne Crawford (2000-2001), Isabelle Pafford (2002), Patrick Crowley (2004-2006), and Andreya Mihaloew (2007). Jane Evans joined the expedition in 2008 and, as I remember, was in the depot looking at coins almost before she had unpacked.

That these unprepossessing (but sometimes overwhelmingly numerous) coins are legible at all is thanks to the meticulous care and patience of many conservators. Kent Severson offers a list of conservators from 1958-2008 in his article, "Understanding and Preserving the Material Culture of Sardis," in Love for Lydia: A Sardis Anniversary Volume Presented to Crawford H. Greenewalt, Jr. (2008). Since then, conservators Briana Feston, Astrid van Giffen, Jennifer Kim, Julia Sybalsky, Cybele Tom, Jill Hari, Hiroko Kariya, Catherine Williams, Brian Castriota, Jessica Walthew, Evelyn Mayberger, Harral DeBauche, Nuriye Arslaner, Emily Frank, Carolyn Riccardelli, Güler Sarıoğlu, Tony Sigel, Aybuke Sultan Koca, Chantal Stein, Lindsay Ocal, and Zeynep Arslan all helped make the coins both legible and stable.

Katherine Kiefer, who edited the Sardis Reports and Monographs series from 1996 until 2016, had a special interest in coins and particularly in the records and database. From 2008-2016 while we were converting our coin and other records to a single relational database, Kathy's intimate knowledge of the system, her sharp eye for inconsistencies, and her unfailing devotion to accuracy resolved innumerable difficulties with the coin database. Her assistant Sheila Nightingale contributed enormously to the endeavor as well.

Publications Data Manager Theresa Huntsman and Publications Coordinator Brianna Bricker have been key players in both the research and the production of this volume. Theresa's careful eye brought order to the frequently inconsistent recording of coins by so many hands. She also copyedited the volume and created the index. Brianna Bricker did page layout and further editing, proofreading, and checking. To all these talented archaeologists I offer my thanks. Maps were drawn by Tenninger Kellenbarger, Kaelin Jewell, and LauraLee Brott. Güzin Eren translated the abstract into Turkish. Production assistance was provided by

Richard Denzer and his colleagues at Puritan Capital of Hollis, New Hampshire.

The Archaeological Exploration of Sardis was begun in 1958 by Professor George M. A. Hanfmann, of Harvard University, and directed by him until 1976. Professor Crawford H. Greenewalt, Jr., of the University of California-Berkeley, directed the expedition until 2008. Many of the coins were excavated under their careful leadership. A great many individuals and institutions have made the excavation, and this volume, possible through their administrative and financial support, and over the past half century, the Sardis Expedition has accumulated too many debts to list or repay. We are first and most profoundly grateful to the Republic of Turkey, to the Ministry of Culture and Tourism, and the General Directorate of Cultural Heritage and Museums for the privilege of working at the site. Many individuals in the Ministry and General Directorate have been instrumental in granting permissions and making excavation and research possible. In thanking the present Minister of Culture and Tourism, the Hon. Prof. Dr. Numan Kurtulmuş, as well as General Director Yalçın Kurt, we extend our gratitude to their predecessors as well. Special thanks are due to Melik Ayaz, Director of the Excavations Division of the General Directorate of Cultural Heritage and Museums, for his warm support.

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Martha Tedeschi, the Elizabeth and John Moors Cabot Director of the Harvard Art Museums, and the previous directors of the museum including Thomas Lentz and James Cuno, have provided the project with a welcoming and intellectually stimulating home and environment since its foundation. We are deeply grateful to Dr. Tedeschi for her continued interest in the Expedition.

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Max Barus, the Bollingen Foundation, the J. Stephens Crawford Trust, the Ruth Covo Family Foundation, the Ford Foundation, Mr. and Mrs. William Frederick, Dr. and Mrs. David Greenewalt and the David Greenewalt Charitable Trust, Dr. Richard Hamilton, the Institute for Aegean Prehistory, the J. M. Kaplan Fund, the John M. Kohler Foundation, Dr. Edwin H. Land and Mrs. Land, Mr. Thomas B. Lemann, the Loeb Classical Library Foundation of Harvard University, the Lucius N. Littauer Foundation, the Charles E. Merrill Trust, the Old Dominion Foundation, Mr. Donald I. Perry, the John and Emma Quint Memorial Fund, Mr. John J. Roche, the Billy Rose Foundation, the Rowland Foundation, Valerie Smallwood, the Susan G. Soderquist Trust, the Eleanor Ransom Swift Trust, Richard and Genevieve Tucker, the Vila B. Webber Charitable Trust, the estate of W. C. Burriss Young, and the Zemurray Foundation, as well as several anonymous donors and foundations. Research and publication have been supported by numerous grants from the U. S. Department of State and the National Endowment for the Humanities. Robert Neer and Ann Eldridge's generous donations allowed the Expedition to assemble an excellent numismatic library at the site, which greatly facilitated the research for this volume. The Supporters of Sardis have provided essential support, financial help, and friendly advice for the excavation, study, and publication of ancient Sardis. It is with great pleasure that we gratefully acknowledge their interest and encouragement.

## Grids, Levels, Sectors,

## Baskets, Lots, and Loci at Sardis

Since the first year of the expedition, excavations at Sardis have mostly been organized using a local grid based on a corner of the Roman Bath-Gymnasium building known as Building B, hence the B-Grid. That corner was given an arbitrary elevation of ${ }^{*} 100.00$, indicated with an asterisk before the number. Other local grid systems include the Artemis Temple Grid, the Acropolis Grid, and various grids at Bin Tepe. The systems of grids and elevations are explained in previous Sardis publications.

Until 1980 contexts were primarily recorded in terms of the excavation sector and absolute coordinates and levels. In the early 1980s a new system of trenches, baskets, and lots was introduced. Baskets
are units of excavation, which are both stratigraphic but also may be arbitrary, if it is not possible or desirable to excavate a complete stratigraphic unit at once. Baskets are combined into Lots at the end of the season, so establishing that season's stratigraphy in a particular trench. Recently we have added a third level of integration, the Locus, which combines lots excavated in different trenches and excavation seasons into larger stratigraphic units. Lack of space prevents us from including full stratigraphic information in the printed catalog of coins. However, the on-line database of these coins at http://www.sardisexpedition.org will have full contextual data available, as well as further photographs and other information.

The unpublished field reports, fieldbooks, and other notes to which Professor Evans refers in footnotes are located in the Sardis Office at the Harvard Art Museums.

Finally, the study of the Greek and Roman coins at Sardis has become synonymous with the names Buttrey and Johnston. Theodore V. Buttrey passed away in January 2018, leaving a legacy of scholarship on the coins and currency not only of Sardis, but throughout the world. Ann Johnston died some years earlier, in January 2010. It is with great sadness that we dedicate this volume to their memories.

Andrew Ramage<br>Associate Director<br>Archaeological Exploration of Sardis<br>Ithaca, New York

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Madison, Wisconsin

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My primary thanks are to Nick Cahill, who invited me to Sardis in the summer of 2008 to study the coins unearthed at Sardis since 2008. He has facilitated my work and provided helpful feedback on my manuscript at all points.

Much of the cooperative teamwork and congenial and stimulating discussion of all things Sardis is due to the leadership of Crawford H. Greenewalt, Jr. (Greenie), who remained as director emeritus at Sardis until his untimely death in 2012. I was fortunate to have known him in his element in the field, if only for a short time.

No less heartfelt thanks go to Marcus Rautman and Andrea Berlin, who shared their knowledge of pottery and helped me think through various deposits in this massive and complex site. Marcus was especially concerned to point me to interesting contexts and the small copper-alloy coin hoards, and I have leaned on his long familiarity with the site and his work on the deposits in MMS in order to sort out Late Roman and Byzantine Sardis. Although I owe Nick, Marcus, and Andrea many thanks for saving me from inaccuracies and unclear thought, any problems that remain are mine alone.

At least half of the joy of returning to the field every summer was a return to friends, all of whom were willing to tutor me in aspects of conservation, drawing, and making use of old records. Kathy Kiefer, who was occupied with the struggle of integrating the older coin records into the newer database, was a supportive sounding board with an eye for detail. Our draftsperson, Cathy Alexander, has eagle eyes and long experience handling Sardis materials, and tremendous stamina for long, talkative evening walks.

Elizabeth Gombosi, Teoman Yalçinkaya, and Baha Yıldırım were excellent and expert companions at the tea and dinner tables. The young "Sardians" who provided me with assistance in the depot are too many to list individually, but Frances Gallart Marqués and Elizabeth DeRidder Raubolt bore the brunt of my questions and unstintingly gave help when needed. The conservators worked wonders on lumpy bits of bronze; our photographers quickly and reliably returned digital images to me. The Turkish commissioners were unfailingly helpful. Our wonderful house staff coddle the team in the most amazing ways.

Back in the States, I had help from Barbara Burrell-herself a "Sardian"-in the sections on the neokorate coins. Carmen Arnold-Biucchi helped me with puzzling identifications and invited me to speak at the Ilse and Leo Mildenberg Memorial Lecture (2013) on the coins from Sardis. I also thank audiences at the conferences of the International Numismatic Congress (Taormina, 2015), the American Institute of Archaeology $(2012,2017)$, the American Philological Association (now Society for Classical Studies, 2013), the American Schools of Oriental Research (2011, 2012, 2016), and the University of Pennsylvania (2013) for their questions and comments. Thomas M. Evans helped me greatly in my statistical exploration of the database, for which I am extremely grateful. A peer reviewer helped me sharpen my arguments. Brianna Bricker's sharp eye kept typos at bay. None are responsible for the errors that remain.

Only last in placement, but first in thought, are my thanks to my husband, for the time I was "in Sardis" both in body and in mind.

## Abbreviations

| Abbreviations of Sectors (see Fig. 1.1 for map) |  |  |  |
| :---: | :---: | :---: | :---: |
| Ac | Acropolis | F55 | Field 55 |
| Ac-FT | Acropolis Flying Towers | F77 | Field 77 |
| AcN | Acropolis North | НоВ | House of Bronzes |
| AcS | Acropolis South | MTE | Middle Terrace East |
| AcT | Acropolis Top | MTW | Middle Terrace West |
| TU | Acropolis Tunnels | UT | Upper Terrace |
| AhT | Ahlatlı Tepecik | For other HoB features, see SPRT figs. 39, 186, 206 |  |
| AT | Artemis Temple and Precinct | KG | Kâgirlik Tepe |
| AT-Pac | Artemis Temple, Pactolus Bank | LAW | Late Antique Wall 31, near CW32 |
| LA | Lydian Altar | MD1/S | Mound 1/S |
| Church M | Church M | MD2 | Mound 2 |
| For other A | AT features, see R1 fig. 59 | MMS | Monumental Mudbrick Structure |
| B | Bath-Gymnasium Complex | MMS/N | Monumental Mudbrick Structure |
| MC | Marble Court |  | North |
| Pa | Palaestra | MMS/S | Monumental Mudbrick Structure |
| For rooms BE, BSH, LNH, etc., see R3 fig. 7 |  |  | South |
| BK | Başlıoğlu Köy | Nec | Necropolis |
| Bldg A | Building A | NEW | Northeast Wadi |
| Bldg C | Building C | PBr | Pactolus Bridge |
| Bldg D | Church D | PC | Pactolus Cliff |
| BS | Byzantine Shops | PIA | Pactolus Industrial Area |
| For individual shops, see M9 fig. 4 |  | PN | Pactolus North |
| BT | Bin Tepe Cemetery | Church E Church E |  |
| ByzFort | Byzantine Fortress | Church EA Church EA |  |
| CG | Bath CG | PT | Peacock Tomb |
| CW | City Wall | PW | Pactolus West |
| CW6 | Section at east of city | PyT | Pyramid Tomb |
| CW32 | Section at west of city | RT | Road Trench, south of B |
| SWG | Southwest Gate | MAS | Monumental Arch Structure |
| For other CW sections, see R1 fig. 11 |  | MRoad | Marble Road |
| EB | Eski Balıkhane | Syn | Synagogue |
| EH | Excavation House | ThSt | Theater-Stadium |
| E Road | East Road | Wadi B | Wadi B Temple and Precinct |
| F49 | Field 49 | W Road | West Road |

## Summary

This book analyzes the coins from the HarvardCornell Sardis Excavations, from the years 1973 to 2013; the coins date from the Lydian period to the late Byzantine period, although Islamic coins will be published separately. An introduction in Chapter 1 outlines the methods of recording the coins, the overall aims of the book, and defines terms used in the book. Chapter 2 discusses the coins in terms of the economic structures of the city, region, and eastern Mediterranean. Beginning with an assessment of the value of excavation coins for the reconstruction of trade and economic processes, the chapter moves to a comparison of the Average Annual Coin Loss/1000 for cities in the eastern Mediterranean during the Roman Imperial period, which is checked by the Chi-Square Goodness of Fit test. The remainder of the chapter analyzes the excavation coins by chronological phases, starting with the earliest electrum coins from Lydia, and moving to the coins minted under Alexander III, Lysimachus, the Seleucid rulers, and the Attalid rulers. Within this discussion is an argument for the opening of the civic mint in the third century BC. Chronological discussion resumes with coins minted under the Roman emperors, including a consideration of the neokorate coins, through the coins of the fifth century AD , with an argument about the problem of recalled coinage, and the problem of fifth-century coin circulation and minting. In the discussion of the sixth and seventh centuries, the problem of urban decline is addressed, along with the problems of the evidence of excavation coins, in terms of circulation and economic activity. The lack of evidence for coins from the eighth through thirteenth centuries is noted.

Chapter 3 situates the coins within notable archaeological contexts. The chapter begins with a
discussion of the types of deposits and the nature of the evidence of the coins. The precious metal coins of the Lydians (e.g., the "croeseids") are discussed in the few archaeological contexts of the excavation from which they came. Late fourth- to secondcentury BC deposits begin to show the length of time of circulation, and specific deposits (a small hoard in PN and in the Theater) are part of the analysis. The study of the following periods highlights the problem of finding Early and High Imperial contexts, but three specific contexts are evaluated: the votive deposit in Field 49; the votive deposit next to the "Wadi B" Temple; and coins used as grave gifts from the Hellenistic to the Late Roman period. The evaluation continues with the examination of identifying fourth-, fifth-, or sixth-century AD contexts, using a statistical method designed by the author (Mean Coin Date), to try and develop an idea of the length of time the coin remained in circulation in the Late Roman period. A brief discussion on coins used as amulets, and eight hoards of bronze coins follows.

The book includes appendices of the countermarks found on the coins; monograms found on the coins; a table of reverse descriptions; and formulas used in the statistical analysis. A full catalog of over 8,000 coins follows, with diameters, weights, die axes, excavation area, and analytical notes completing the description of types. Twenty-five figures, 44 tables, and six plates showing the excavation coins illustrate the arguments. A bibliography of works cited, a concordance between the field numbers and the catalog numbers, and indices of names and geographical places, as well as a general index complete the book.

## Özet

Bu kitap, Harvard ve Cornell Üniversitelerinin 1973 ve 2013 yılları arasındaki kazılarında bulunmuş olan sikkeleri inceler. Sikkelerin tarihleri Lidya Devri’nden Geç Bizans Dönemi'ne kadar uzanır, ancak İslam Dönemi sikkeleri münferit olarak yayınlanacaktır. Giriş bölümü, sikkelerin belgelenme yöntemlerini ve kitabın genel amaçlarını ana hatlarıyla tanıtırken, kitapta geçen terimleri tanımlar. İkinci bölüm, kentin, bölgenin ve Doğu Akdeniz'in ekonomik yapısı çerçevesinde sikkeleri tartışır. Ticaretin ve ekonomik süreçlerin canlandırımı için kazı sikkelerinin önemini değerlendirerek başlayan bölüm, Ki-Kare Uyuşum Denencesi yöntemi ile test edilen Roma İmparatorluk Dönemi Doğu Akdeniz şehirlerinin Ortalama Ylllik Sikke Kaybı/1000 karşılaştırması ile devam eder. Bölümün geri kalan kısmı, Lidya'da üretilmiş en erken tarihli elektrum sikkelerden başlayarak, Büyük İskender, Lysimachus, Seleukos hükümdarları ve Attalos hükümdarları yönetiminde basılmış sikkelere uzanan maddi buluntuları zamandizimsel evrelere göre analiz eder. Bu tartışma dahilinde, kente ait sivil darphanenin MÖ 3. yüzyılda kurulduğu savı da yer alır. Kronolojik tartışma, Roma imparatorları yönetiminde basılan sikkelerle devam ederken, neokoros sikkelerinin değerlendirmesi, MS 5. yüzyıl sikkeleri ile bunların geri toplatılma sorunları ve MS 5. yüzyıldaki tedavül ve sikke basımı meseleleri de bu kapsamda sunulur. MS 6. ve 7. yüzyılların tartışmasında kentsel gerileme sorunuyla birlikte kazı sikkelerinin arkeolojik delil problemleri tedavül ve iktisadi faaliyetler açısından ele alınır. MS 8 ila 13 . yüzyıllar arasında sikkelere dair delillerin yokluğu ayrıca belirtilir.

Üçüncü bölüm, sikkeleri önemli arkeolojik bağlamlarda değerlendirir. Bu bölüm, arkeolojik depozit tipleri ile sikkelere dair delillerin doğasını
tartışmakla başlar. Lidyalıların değerli madenlerden üretilmiş sikkeleri (örneğin kroesidler), içinde keșfedildikleri az sayıdaki arkeolojik bağlamda tartışlır. MÖ geç 4 ila 2. yüzyıla ait tabakalar, tedavül sürelerinin uzunluklarına dair bilgi sağlarken, PN ve Tiyatro sektörlerindeki birer küçük define gibi belirli bırakıntılar analiz konusunu oluşturur. Takibindeki dönemlerin araştırması, Roma İmparatorluğu’nun özellikle erken ve yükselme dönemlerine ait kontekstleri bulma sorununun altını çizse bile, Alan 49'daki adak bırakıntısı, "Wadi B" Tapınağı’nın yakınındaki adak bırakıntısı ve Hellenistik Dönem'den Geç Roma Devri'ne kadar mezar hediyesi olarak defnedilmiş sikkeler olmak üzere özellikle üç kontekst ele alınmıştır. Değerlendirme, MS 4., 5. ve 6. yüzyıllara ait bağlamları tespit etmek üzere yapılan incelemeyle devam eder. Bu inceleme için Geç Roma Dönemi'nde sikkelerin tedavülde kalma süreleri hakkında fikir yürütebilmek adına kitabın yazarı tarafından geliştirilmiş istatistiksel yöntem (Ortalama Sikke Tarihi) uygulanmışttr. Bu bölümü ise tunç sikkelerden oluşan sekiz define ile nazarlık olarak kullanılmış sikkelerin tartısması takip eder.

Bu kitap, sikkelerin üzerinde yer alan darphane işaretlerini ve monogramları, sikkelerin arka yüz tasvirlerinin tablosunu ve istatistiksel analizde kullanılan formülleri kapsayan ekleri içerir. 8000 'in üzerinde sikkenin tam kataloğu, sikkelerin çapları, ağırlıkları, kalıp yönleri ve kazı alanları ile tiplerinin tasvirini tamamlayan diğer analitik notlarla birlikte bu ekleri takip eder. Sikkeleri betimleyen 25 şekil, 44 tablo ve 6 levha ortaya atılan görüşleri görsel olarak destekler. Alıntıların kaynakçası, kazı ve katalog numaralarının bağlamlı dizini, kişi ve yer isimlerinin dizini ile genel dizin kitabı tamamlar.

Abbreviations of Sources

| AA | American Antiquity | M1 | Bates 1971 |
| :---: | :---: | :---: | :---: |
| AJA | American Journal of Archaeology | M7 | Buttrey et al. 1981 |
| AJN | American Journal of Numismatics | M7 GR | Greek and Roman coins |
| ANS | American Numismatic Society | M7 LR | Late Roman coins |
| ANSMN | ANS Museum Notes | M7 B | Byzantine coins |
| ANSNNM | ANS Numismatic Notes and | MIB | Hahn 1973 |
|  | Monographs | MIBE I | Hahn 2000 |
| AASOR | Annual of the American Schools of | MIBE II | Hahn and Metlich 2009 |
|  | Oriental Research | NC | Numismatic Chronicle |
| BASOR | Bulletin of the American Schools of | OJA | Oxford Journal of Archaeology |
|  | Oriental Research | QuadTic | Numismatica e Antichità Classiche |
| BMC | British Museum Collection |  | (Quaderni Ticinesi) |
| BMC Caria | Head 1897 | RevBelgeNum | Revue Belge de Numismatique |
| BMC Galatia | Wroth 1899 | RevNum | Revue Numismatique |
| BMC Ionia | Head 1892 | RIC I ${ }^{2}$ | Sutherland 1984 |
| BMC Lycia | Hill 1897 | RIC II | Mattingly and Sydenham 1968 |
| BMC Lydia | Head 1901 | RIC III | Mattingly and Sydenham 1930 |
| BMC Mysia | Wroth 1892 | RIC IV. 1 | Mattingly and Sydenham 1936 |
| BMC Phrygia | Head 1906 | RIC IV. 2 | Mattingly, Sydenham, and |
| BMC Pontus | Wroth 1889 |  | Sutherland 1938 |
| BMC Tauric | Head and Gardner 1877 | RIC IV. 3 | Mattingly, Sydenham, and |
| Chersonese |  |  | Sutherland 1949 |
| BMC Troas | Wroth 1894 | RIC V | Webb 1968 |
| BMC Vandals | Wroth 1966 | RIC VI | Sutherland 1967 |
| BNJ | British Numismatic Journal | RIC VII | Bruun 1966 |
| CCJ | Cambridge Classical Journal | RIC VIII | Kent 1981 |
| CH | Coin Hoards | RIC IX | Pearce 1951 |
| CQ | Classical Quarterly | RIC X | Kent 1994 |
| DOC I | Bellinger 1965 | RPC I | Burnett, Amandry, and Ripollés 2005 |
| DOC II | Grierson 1968a, 1968b | RPC II | Burnett, Amandry, and Carradice |
| DOC III | Grierson 1973a, 1973b |  | 1999 |
| DOP | Dumbarton Oaks Papers | RPC III | Amandry and Burnett 2015 |
| GIC | Howgego 1985 | RPC IV | Heuchert and Howgego online |
| HTR | Harvard Theological Review | RPC VII. 1 | Spoerri Butcher 2006 |
| HSCP | Harvard Studies in Classical Philology | RRC | Crawford 1974 |
| INJ | Israel Numismatic Journal | SNG | Schweizerische Numismatische |
| INR | Israel Numismatic Research |  | Gesellschaft = Société Suisse de |
| JAN | Journal of Archaeological |  | Numismatique |
|  | Numismatics | SNG Ashmolean Sylloge Nummorum Graecorum: |  |
| JAS | Journal of Archaeological Science |  | Great Britain V, The Ashmolean |
| JÖВ | Jahrbuch der Österreichischen |  | Collection, Oxford |
|  | Byzantinistik | SNG Cop | Sylloge Nummorum Graecorum: |
| JRA | Journal of Roman Archaeology |  | The Royal Collection of Coins and |
| JRS | Journal of Roman Studies |  | Medals, Danish Museum. Copenhagen |


| SNG France | Sylloge Nummorum Graecorum: <br> France, Cabinet des Monnaies, <br> Médailles et Antiques, Bibliothéque |
| :--- | :--- |
|  | Nationale, Paris <br> SNG Munich <br> Sylloge Nummorum Graecorum: <br> Deutschland, Munich Staatliche <br> Münzsammlung |
| SNG Tübingen | Sylloge Nummorum Graecorum: <br> Deutschland, Tübingen, <br> Sünzsammlung der Universität |
| SNG Turk 1 | Konuk 2002 |
| SNG vAulock | Sylloge Nummorum Graecorum: |
| SNR | Deutschland, Sammlung von Aulock <br> Schweizerische numismatische |
|  | rundschau = Revue suisse de |
| numismatique |  |

## Chapter One

## Introduction

TThe coins excavated at Sardis have been well served, as they have been carefully recorded and published. H. W. Bell's earliest efforts were some of the only artifacts from Howard Crosby Butler's excavation that received such treatment (1916). George E. Bates provided information about the Byzantine finds (1971); the Lydian, Hellenistic, Roman Provincial, Imperial, Late Roman, and a few Byzantine coins, along with some of the Islamic and modern coins, were published by the team of T. V. Buttrey, Ann Johnston, and Michael L. Bates, with Kenneth Mackenzie (1981). ${ }^{1}$ Since August of 1972, the excavation coins were carefully cleaned, preliminarily identified by volunteer field readers, and placed into envelopes. Many of those envelopes, and the field records, were marked "necdem," short for "necessary details missing." Others were marked "needs further study." Thus, when I arrived in the summer of 2008, I found over 6,000 coins that were carefully noted in terms of findspots and usually satisfactorily placed within the correct chronological range, often thanks to the supervision and sharp eye of Andrew Ramage.

1 Hereafter, cited as M7. Since I do not read Arabic, I have chosen to leave the Islamic coins out of the catalog; they will be published by Şule Pfeiffer Taş in a forthcoming article. Both the Islamic coins found since 1972 and those found earlier, but not published by Mackenzie in Buttrey et al. 1981, are available through individual records and corresponding photographs in the database. There were no Crusader coins found in the current excavations.

When coins are found in the field, the excavator assigns them a day number, draws the outline in his or her field notebook, and places the coin in an envelope detailing the year, trench, sector, month/ day, and (by 1983) stratigraphic unit. At the end of the day, the excavator gives the coin to the registrar, who provides the coin a number, the first four digits of which announce the year it was found. Prior to my arrival, some coins, which were considered interesting for various reasons, were given a second number (thus, a coin could be 1980.0849 or C80.0039); if the coin was recovered outside of controlled excavation, it was given a "NoEx" number. This dual-numbering system has since been clarified: coins are now given a single coin number, and they are tracked with that number through conservation and photography. The process of cleaning and conserving the coins was essentially set up by Kent Severson; it should be noted that, because of careful lab procedures, very few disintegrate. Happily for me, even fewer are not assignable to a broad category, but they remain in chronological purgatory. Most of the coins remain in a secure facility on site, but some of the most legible or interesting coins are chosen annually to be housed in the Manisa Museum.

There is no need to review the history of the site, nor the history of the excavations, both of which are thoroughly covered in George Hanfmann's Sardis from Prehistoric to Roman Times: Results of the

Archaeological Exploration of Sardis 1958-1975 (1983), Reports and Monographs on various aspects of the site, and preliminary reports in the Bulletin of the American Schools of Oriental Research, the American Journal of Archaeology, and Kazı Sonuçları Toplantısı. The coins in this monograph were largely unearthed when Crawford H. Greenewalt, Jr. was director, and work concentrated in sectors MMS, MMS/S, MMS/N, and ByzFort (Fig. 1.1). Under Cahill, excavations have concentrated on Field 49, the Theater, the Road Trench (across the road from MMS), and Field 55.

Cahill's development of an electronic database for the excavation has greatly facilitated my work. Not only does this allow us to track the coins more easily, but it also provides me with contextual information that is immediately helpful in my identification of the coins. After I make an identification of the coin, the excavators consult the same database to find out the information I have posted on "their" coins. The coins are assigned to "baskets," primarily a system of excavation units. After reading the pottery in the baskets, the excavator assigns the basket to a "lot," or stratigraphic unit, usually composed of one or more baskets. After the lots are entered into the database, I can tell at a glance what other coins were found in the lot and can reference useful information such as the type of pottery or other objects found in the same lot. Photographs of the coin (currently, not every coin is photographed, but the majority of legible coins are) are attached to the record, along with any drawings I have made of monograms. The database, digital images, and constant internet access allowed me to work in a manner that I suspect would have made the late Ted Buttrey and the late Ann Johnston envious; I remain in awe of the work they did in the publication of more than 15,000 coins in Greek, Roman, and Islamic Coins from Sardis (1981).

The second chapter discusses the coins within the larger Hellenistic, Roman, and Byzantine worlds. In it, I note parallels to other large urban centers in the eastern Mediterranean to help elucidate the use of copper-alloy coins within the monetized economy of Sardis. In the third chapter, I discuss the coins in their archaeological contexts. The discussions range from the perennial chronological problems to our understanding of how coins were used (and lost) in the city. I have returned several times to contexts
from Hanfmann's excavations, when the subsequent study of materials from those years allowed me to say something about the contexts. I have not included the study I have made of coins from the Synagogue, as Andrew Seager is preparing a comprehensive volume on the building and its finds. My intent is twofold here: to give us an understanding of how the coins were used in non-economic contexts; and to explore the possibility of defining normal profiles for different chronological horizons, in order to help us gauge the number of years a coin may stay in circulation and to aid the archaeologist in reconstructing the chronology of the strata, especially the Late Roman layers. For the latter, I developed the use of a formula to ascertain the Mean Coin Date, based on a formula long used by archeologists of the modern era to determine the chronological horizons of their strata using the Mean Ceramic Date. The result is not a precise number, but an overall ratio that gives us some insight into fourthand fifth-century AD deposits. ${ }^{2}$

I end here with a few words about the terms used in the book: Lydian and Persian (or Late Lydian) are used instead of Archaic and Classical, as they are more meaningful to Sardis. The Hellenistic phase is considered as beginning in the late fourth century and lasting until 31 BC . I chose the closing date since this is the opening of Roman Provincial Coinage, ${ }^{3}$ although Rome had control of Sardis for over one hundred years by 31 BC . There are numerous Late Hellenistic issues produced through the first century BC. ${ }^{4}$ Nevertheless, the numismatic watershed is the appearance of Octavian or Augustus on the obverses of coins, making this the divide between Hellenistic and Roman. In Sardis, the introduction of coins with the head of Augustus permanently changed the types, style, and (slightly later) metrology of the coins. The end of the Imperial period is conventionally placed when the reforms of the coins by Constantine similarly permanently changed the face of the coins and the users' interaction with them. The Imperial period is thus dated 31 BC to 324 AD . For the Late Roman period, I follow numismatic convention in dating the era between 324 and 498 AD , after which

2 All dates are AD , unless otherwise noted as BC .
3 Burnett, Amandry, and Ripollés 2005.
4 Burnett, Amandry, and Ripollés 2005, p. xiv.
we have another monumental numismatic reform. This can lead to some overlapping terminology in the field records only when other materials are discussed, such as pottery. In the database and in my catalog, the coins of Anastasius I begin the use of the term "Byzantine," even though for the first seven years of his reign, the mint only produced coins that would have fit quite comfortably in a Late Roman money purse.

# Chapter Two <br> Excavation Coins as Evidence of the Economy and Trade 

Numismatists studying Roman and Byzantine deposits have constructed most of the hypotheses of what excavation coins mean in terms of the reconstruction of the ancient society. However, scholars of the Hellenistic world, and to a lesser extent, the Lydian kingdom, have confronted the problem as well. Since the excavation coins are primarily copper-alloy coins, I focus my attention on them.

Most numismatists would agree with a recent assessment that excavation coins provide a way for us to understand the kinds of lower denominations in circulation, the level of monetization of a site (more transactions would lead to higher losses, as the coins changed hands more often), and economic ties to surrounding cities. ${ }^{1}$ Richard Reece took pains to remind readers that the coins do not display the wealth of the people living on the site where they were excavated, nor the "condition of an economy" of the site. ${ }^{2}$ Kevin Butcher objected to the use of excavation coins to analyze the ancient economy, noting that not all coins are tightly, or even well dated and the loss of the coins may be greatly impacted by local developments, such as the Sassanid sack of Zeugma. He is also uncomfortable calling each coin "lost" instead of "discarded"; perhaps the coins found on the

1 e.g., Katsari, Lightfoot, and Özme 2012, p. 1.
2 Reece 2003, p. 143.
site had been discarded as worthless since they could no longer be used in transactions. ${ }^{3}$ However, as John Kroll pointed out for Hellenistic coins found in the Athenian Agora, some coins may have been discarded as useless for legal tender (and I would argue this may be the reason why certain coins are found in votive deposits). This is probably true for foreign coinsespecially those similar in size and weight to local civic coinages-that appear to have been accepted in local circulation, and even hoarded together with local coins. ${ }^{4}$ I will argue below that the bronze coins from the excavation allow us to say something about the local conditions of the period when they were discarded or lost. More information about the site and region can be obtained in the comparison of Sardis to regional and extra-regional sites in the East.

The number of coins found on a site is dependent on several factors, some of which we can no longer gauge more than very approximately. The size of the initial issue is of crucial importance. Although valiant efforts have been made to estimate the number of coins produced in an issue using die studies, these can only give us very rough estimates. In essence, the supply of the coins to the site is dependent both on the size of the issue and the means of distributing coins to the non-

3 Butcher 2013, pp. 2-3.
4 Kroll 1993, pp. 168-70.
mint city. ${ }^{5}$ A word of caution is in order; numismatists have largely backed away from estimating the size of the issue by mathematical models that use the number of dies known. ${ }^{6}$ Further limiting this figure is the problem of doing die studies on corroded and worn Roman Provincial bronzes. In other words, we may only ever have a very approximate idea about the original size of issues from the coins found on an excavation and in museum collections.

Hopkins introduced the problem of the velocity of coin circulation. ${ }^{7}$ Richard Duncan-Jones tried to assess the speed at which a coin changed hands by examining weight loss, concentrating on western coinages. ${ }^{8}$ The problem is complex in a city like Sardis that minted its own bronzes. These coins would not have had to travel far, theoretically reducing wear on the coins, but they may have been exchanged often, as the city was highly monetized. The resulting wear on the coin can imply either a long period of circulation or a shorter period of circulation at a higher velocity. It is thought, for instance, that coins of the first century AD that are worn smooth show this wear because of long use; countermarks of the second and even third century on these coins would suggest this long period of circulation. The situation changed in the mid-third century, when Sardis no longer produced its own coins and was dependent on Imperial mints. The wear on the coin may only give us a clue as to how often it changed hands or remained in use, at least in gross terms. ${ }^{9}$

The difference between the time of issue and the time of loss may help us define how long it took coins to reach non-mint sites, especially after the municipal

[^0]8 Duncan-Jones 1998, pp. 180-92; see a recent critique of Duncan-Jones's method in Hoyer 2013.

9 King 2013, pp. 30-31; Doyen (2011, p. 32) estimates the date of loss of a coin due to the wear shown on the coin, on a scale of $0-10$. Unfortunately, this seemingly more precise method does not take into account post-depositional processes. For an unusually clear example of these processes, see Section 3.3.1. Doyen does caution the reader that his method cannot account for coins taken out of circulation for a time (e.g., in a hoard) and then re-circulated (pp. 32-33). More interesting is his example of coins circulating in bags (p. 34), leading him to the conclusion that wear is graphed in a Gaussian curve (p. 37).
mints closed. ${ }^{10}$ Anthony King used the minting date of the earliest and latest coin in the deposit to find the minimum period of circulation. His regression analysis suggests that the deposit should have eleven or more coins in it as the best predictor of the date of the deposit. ${ }^{11}$ The numismatist must pay careful attention to deposits here, for if the coin is in a secondary deposit, then the calculation of minimum period of circulation can be skewed. However, taking into account the type of deposit in which the coin is found can lead to an understanding of the length of time coins were available to be used as legal tender (see especially Sections 3.5 and 3.6 on the Late Roman and Early Byzantine periods).

In order to get a closer look at how long coins remained in circulation, the numismatist must work carefully with the archaeologist and the pottery expert to assess the date of the stratum in which the coin was found. ${ }^{12}$ Coins associated with pottery are often viewed as reliable indicators of the periods of circulation, in a manner similar to coins found together in a hoard. ${ }^{13}$ As can be seen in the computation of the Average Annual Coin Loss per 1000 (e.g., Fig. 2.1; App. 4), almost all sites in the East report an increase in coins beginning around 250 and lasting until the mid-fifth century. This is a phenomenon that is well known across the Mediterranean, and is usually linked both to the loss of value of base-metal coins and to the higher rate of minting for coins of the mid-fourth to mid-fifth century. ${ }^{14}$

One variable that enters into the problem of the longevity of use of the coin is if the government recalled issues for reminting. ${ }^{15}$ The problem is especially important in the Late Roman and Early Byzantine periods, and I address it specifically in Sections 2.5 to 2.7. Reminting continued to be a factor in Byzantine coinage, especially as copper grew scarce, although some of the difficulties of obtaining metal

[^1]to coin were solved by overstriking. ${ }^{16}$ Paradoxically, it is overstriking that allows us to understand that coins up to 100 years old were available to the mint, but Philip Grierson warned that overstriking can distort our ideas about the distribution pattern of the original issue. ${ }^{17}$

As Douglas Newton pointed out, a common argument (which is rarely made, but which informs the publication of most excavation coins) is that "patterns in finds of accidentally lost coins mirror patterns in coins in circulation to a useful extent," as long as the numismatist accounts for the fact that low-value coins are most commonly lost due to the owner's presumed energy in retrieving a high-value coin. ${ }^{18} \mathrm{He}$ tested this argument by comparing coins lost in 2004 in the UK to known mint production and found "a strong relationship between the number of coins found and the numbers in circulation," with a very low standard deviation. Newton would thus see the excavation coins as reflecting ancient circulation. Nevertheless, in the end, he suggested that certain factors in antiquity might skew this strong correlation, including the problems of hoarding; degradation of the coin in the earth; and method of retrieval, especially true for tiny fifth-century coins. ${ }^{19}$ Coins are only one of the pieces of evidence that we can use to reconstruct "everyday economic activity." ${ }^{20}$

While numismatists were content in the early twentieth century to simply list coins by mint and date of issue in excavation reports, John Casey developed the equation of dividing the coins not only by the length of reign (Average Annual Coin Loss), but dividing by 1,000 in order to more easily compare sites with few coins to sites with large

16 When an existing coin is used as a blank for a new coin type, the process is called overstriking. Traces of the earlier type can often be seen under the later impression.

17 Grierson 1966, p. vi.
18 Newton 2006, p. 215; cf. Reece 1984b, pp. 201-2.
19 Newton 2006, pp. 217, 220-21. Note that Newton did not distinguish between primary and secondary deposits; nor do other numismatists looking at overall patterns of loss in excavation coins. In a perfect world, numismatists would only compare primary deposits with other primary deposits, and our studies would be very small. Yet even when coins are found in secondary deposits, they must have once circulated in the city, which is why numismatists combine both kinds of deposits in their analyses.

Newton 2006, pp. 221-22.
numbers of coins (see App. 4). ${ }^{21}$ Reece has especially advanced this approach, forming the periods for the western half of the empire. The intent of this equation is to get a basic understanding of the circulation pool from which the excavation coins are drawn. ${ }^{22}$ I have pursued this approach and compared the Sardis cohort with other eastern Mediterranean sites.

In order to validate the numbers, I joined this equation with a Chi-Square Goodness of Fit test (as in Evans 2007; see App. 4). This test tells us whether the differences in the site totals are significant (and thus can be explained as something happening in the broad picture) or are not valid; the sample is an assortment of coins from sites but the collection has no larger meaning. If valid, the AACL/1000 results alert us to broad patterns of loss within cities. They cannot tell us when a particular coin is lost. Kenneth Harl suggested that the AACL/1000 test was particularly helpful in tracking periods of inflation, when more coins were lost and not recovered. ${ }^{23}$ David Wigg-Wolf would eliminate coins from hoards and votive deposits from these calculations to provide a sharper picture. ${ }^{24}$ I have decided to include the hoards in the AACL totals (very few coins come from votive deposits), though I tried to remain sensitive to the adjustments this might make in the statistical analyses (e.g., Section 3.5). ${ }^{25}$ The problem is particularly accute for the fourth and fifth centuries, which I have analyzed with a new method, the Mean Coin Date, to try and determine the chronological composition of a fourth- or fifthcentury deposit.

## 21 Casey 1974.

22 Reece 1984a. Pottier (1983) introduced a much more complicated formula for a bronze hoard; since other numismatists have not used this formula, I have chosen to ignore it in order to make comparisons between Sardis and other sites. Another method of analysis to calculate the total value of the coins lost was initiated, then deemed "inconclusive" by Reece: see Reece 1975; 1984b, p. 200; cf. Doyen 2011, pp. 21-25, who also rejected the approach.

23 Harl 1996, p. 18.
24 Wigg-Wolf 2009, p. 111.
25 My reasoning is as follows: all but a very small hoard could be dated to the fifth century; only one of the hoards is sizable, and it closed in the fifth century; the fifth century is under-represented in the AACL calculations, since so many from this century were illegible; even so, given the large numbers of coins from the excavations, the largest hoard had little impact on the numbers.

We can never say that we are working with a random sample, since the number of coins on a particular site is only a small percentage of coins that came from the mint, and the number of coins found is only a small percentage of all coins that ever came to the city. ${ }^{26}$ The coins may even be only a sample of the coins in the deposit. Thus, we actually have a sample of the coins that were lost, which is a sample of the coins that came to the city, and which is itself a sample of the coins in circulation. ${ }^{27}$ The archaeological aims of the excavator ensure that the sample is not random, as the archaeologist does not randomly dig test pits across the city (and manages to find each phase of occupation in such pits), but sets up a hypothesis to be tested by digging. It is the Chi-Square Goodness of Fit analysis that allows us to say that the sample does mean something and is at least representative of the base-metal coins in circulation.

With all these caveats in place, the study of excavation coins can indeed tell us something about the site, and the region, beyond the contextual or use situations. ${ }^{28}$ In order to view the site within the regional context, I have plotted the AACL/1000 and checked it with a Chi-Square Goodness of Fit test for large eastern cities comparable to Sardis, beginning with the region (Anatolia) and extending the study to Greece and ancient Palestine (Fig. 2.5). These areas were not very dependent on coins from western mints and are just now receiving this kind of numismatic attention, which has long been focused on western Europe. In exploring these other sites, I have attempted to set up a "normal" profile for the cities. ${ }^{29}$ Deviations from the norm can thus be explored for significance, and while I am well aware of the limitations of older data and problems of publication of bodies of excavation coins, I think the experiment is worth doing. ${ }^{30}$

For the Imperial period, the graph shows that there are several "normal" cities within the profile: Sardis, Pergamum, Ephesus, Corinth, Butrint, and Caesarea Maritima (Fig. 2.2). Those not conforming

[^2]to the overall pattern are Priene, Kenchreai, and Athens. In the normative profile, the high number of coins from the Augustan period drops through the Flavian period, rises again in the Antonine period, drops in the Severan, rises to a high in 238-284, and then drops in the Tetrarchic period. ${ }^{31}$ Deviations from this profile will be discussed in the relevant sections below.

For the Late Roman and Early Byzantine periods (Fig. 2.3), the coins from the excavation at Kalenderhane Camii in Istanbul alone deviate from the "normal" profile. In eliminating this site from the profile (Fig. 2.4), we can see more easily the normative trends: a high point of finds from 324-364 (coins minted by the House of Constantine), which will surprise no numismatist, leading to a lesser number of coins for the rest of the fourth century. The numbers increase in the first half of the fifth century, leading to a drastic fall in the second half of the fifth century (there are variations in each of these periods at the different sites). Some sites show a recovery in the numbers for the reigns of Anastasius I through Phocas; the numbers plunge after this, leading to a low during the reign of Constans IV (after which Sardis has no real deposits, so I stopped assembling profiles). Again, deviations from this norm will be discussed in the sections below. ${ }^{32}$ In order to test the results, I have performed a Chi-Square Goodness of Fit analysis; the results are that the AACL/1000 is valid. ${ }^{33}$ For all the periods, the differences between the groups is significant: we are looking at a real pattern in the sample, not a random conglomeration of coins (see App. 4).

[^3]
### 2.1 The Lydian Period

Sardis was a prolific mint of electrum coins in the seventh and sixth centuries BC, in part because the rulers of the city invented electrum coinage and controlled most of the major electrum sources in Turkey. Numismatists are uncertain if the state held the monopoly on minting or if bankers and merchants were also allowed to strike coins. ${ }^{34}$ The most widely accepted theory is that the coins were minted as a "practical convenience," especially for large-scale transactions by the state, such as payment of soldiers or collection of taxes. ${ }^{35}$ Perhaps the soldier who died on the walls of Sardis with his fractional coin (no. 2.1) is an indication of how coinage had penetrated into the life of citizens of the city. ${ }^{36}$

It is generally agreed that the electrum lion-head stater, weighing just over 14 g , and its fractions, were the first coins that can be definitely attributed to the mint in the Lydian royal city of Sardis. Alram argued that since there are a number of fractions associated with the stater (as here, coin nos. $\mathbf{1 . 1}$ and 1.2), then the coins were in widespread use for many different types of transactions, even at this early date. ${ }^{37}$ François de Callataÿ noted that even a guess of the number of dies known (although no complete die study exists of any electrum coinage), compared to the number of specimens known, as well as the range of denominations struck, suggests a "massive striking" which "implies levels of monetization not reached [again] until many centuries later." ${ }^{38}$ Cahill suggested that these coins are a byproduct of "the rise of Lydian imperialism in the seventh [century] BC," especially given that the source of the metal for the coins may have come from northwest Anatolia, not the Pactolus River. ${ }^{39}$

The electrum coins maintained a very consistent weight and proportion of gold to silver in their alloy. The total percentage of gold in each coin approximates $54 \% .{ }^{40}$ Previous discussions on whether the gold

34 Konuk 2012, p. 47; Wallace 1987, who argues strongly for the former; see also van Alfen et al., forthcoming.
35 Kraay 1976, p. 28; Price 1983, pp. 7-8; Wallace 1987, p. 386.
36 de Callataÿ 2013, p. 7.
37 Alram 2012, p. 62.
38 de Callataÿ 2013, p. 9.
39 Cahill 2013, p. 150; also Cahill et al., forthcoming.
40 Konuk 2012, pp. 44, 47; Walburg 1991, p. 12; Wallace 1987, pp. 386-87.
is concentrated on the surface of the coin due to post-depositional processes have now been settled by SEM-EDS analysis of two electrum trites found on the Acropolis of Sardis (nos. $\mathbf{1 . 1}$ and 1.2). ${ }^{41}$ The enriched surface was intentional, not a product of the environment in which the coin remained hidden in ancient and modern times.

The date of the minting of both series has remained controversial, although the Sardis excavations show that Croesus minted both gold and silver coins. Some scholars argue for "high" dating of the initial striking, in the second quarter of the seventh century BC, based on the date of the Ephesus temple deposit; most argue for a "low" date of the last quarter of the seventh century BC..$^{42}$ Michael Kerschner and Koray Konuk prefer the mid-seventh century BC date as a terminus ante quem, based on their reassessment of the archaeological context of the Ephesus temple deposit. ${ }^{43}$ Since the contexts of the earliest coins found at Sardis cannot add any evidence as to the chronology of the series, I have retained a measure of uncertainty in the catalog as to the date.

Scholars divide the "croeseid" coins into early and late groups, based on weight and stylistic considerations. The heavy standard consists of a stater that weighs about 10.71 g , which was issued in both gold and silver. Coin no. $\mathbf{2 . 1}$ is a fraction of the heavy stater; the style of the obverse (Naster's Massive, Carradice's Early, or Nimchuk's B type) has been called a "powerful and stocky form" with "large dimensions" in a "fine naturalistic manner." ${ }^{24}$ The silver staters were produced longer than the half silver staters; as a result, the staters were more widely circulated and often appear more worn through longer use. ${ }^{45}$ Silver staters such as the one found in a dump on the Acropolis (no. 3.1) have been dated to ca. 560-525 BC, based on hoard evidence. ${ }^{46}$

No Persian sigloi or darics have yet been excavated at Sardis, leaving a long lacuna in the coin evidence.

## 41 Cahill et al., forthcoming.

42 e.g., Price 1983, p. 4; Weidauer 1975, pp. 108-9; cf. Alram 2012, p. 62.

43 Kerschner and Konuk, forthcoming.
44 Naster 1965; Carradice 1987, pp. 74-75; Nimchuk 2000, p. 6.
45 Naster 1976, p. 131.
46 Nimchuk 2000, pp. 21-22; Wallace 2016 suggests a much earlier date for the beginning of Croesus's reign.

### 2.2 The Hellenistic Era:

The Late Fourth to Early Third Century BC
By the late fourth and early third century BC, the numismatic picture of coin circulation in Sardis becomes clearer, if only because portraits of rulers on coins allow some discussion of the chronology of the period. The new era began when Sardis voluntarily submitted to Alexander the Great and was rewarded with a royal grant to build a temple to Zeus Olympios (Arr. Anab. 1.17.3-6). ${ }^{47}$ Worship of Artemis must also have occurred in an important sanctuary in this period, even if the first evidence of building comes from later in the Hellenistic period. ${ }^{48}$ Scholars used to consider temples as drains on the local economy that needed constant infusions of money, pointing to the need for upkeep or construction of sacred buildings and daily rituals. John Ma has suggested instead that sanctuaries contributed to the local economy by being taxed. ${ }^{49}$ The temple also contributed to the marketplace (in terms of surplus offerings), held wealth in the form of votive offerings and land, and gathered fines or received legacies to offset some expenses. ${ }^{50}$ Thus, two important sanctuaries in the city (the temple to Zeus has not yet been found; it is not known if it was ever built) contributed to the economy and growing monetization of the city.

Alexander authorized the mint at Sardis to reopen; from it came new denominations, weights, and types that were standardized across the entire region of Asia Minor, with a few exceptions. ${ }^{51}$ However, Alexander's bronze issues cannot be clearly distinguished from the identical issues minted by his successors, which were also produced in Sardis. Martin Price argued that we should rely more on excavation coins than arguments about control marks in order to assign mints. ${ }^{52}$ These coins of the late fourth and early third century BC are normally found in

47 For an overview of this period at Sardis, see Ratté 2008; Berlin and Kosmin, forthcoming.
48 Cahill and Greenewalt 2016, pp. 498-500.
49 Ma 1999, p. 134.
50 Dignas 2005; Chankowski 2011.
51 Mørkholm 1991, p. 50; Thompson 1983, p. 42. For a full discussion of the Hellenistic mint at Sardis, see Evans in Berlin and Kosmin, forthcoming.

52 Price 1991, p. 320, contra Thompson 1983.
secondary or even tertiary contexts or are stray finds (see nos. 11-16). In several cases, the excavation coins suggest mints for previously unsettled coins (nos. 11, 14-18). These had either been given no attribution of mint or placed somewhere in western Asia Minor, as, for instance, a unit with the head of young Herakles r./rider galloping r., $Ф \mathrm{I}$, but no accompanying symbol (no. 17). Also probably from Sardis, though found in fewer numbers on the site, is the unit, no. 14 (and probably no. 15), with the head of young Herakles r./bow in case and club A $\Lambda E E A N \triangle P O Y$, and a cup. Along with this is a quarter unit, no. 16 , with the same types as the unit.

Christopher Matthew suggested that the coin types show that the changing bosses of the shields on the obverses commemorate certain units of the Macedonian army (cf. no. 11). He thought that cities minted these in short bursts in order to commemorate the actions of the soldiers in recent battles. Hence, those minted in Sardis were minted for units who fought in the Battle of Granicus and are thus earlier than Price suggested; they were not struck for the use of the soldiers once they entered the city, but to make purchases in the local market. ${ }^{53}$ Since we have no record of which units moved to Sardis after the battle, this is perhaps a circular argument, but Matthew's point about the brevity of minting might hold.

Price noted one example of the coin that is no. 18 here, head of young Herakles r./bow in case and club, $\operatorname{BA} \Sigma I \Lambda E \Omega \Sigma$, with a torch beneath. Since there are three more examples from the current excavations, it is likely again that the mint is Sardis. Price listed a number of these coins (and an associated series) with a countermark of a lion's head $r$. He seemed to favor J. G. Milne's suggestion that the countermark was stamped during Lysimachus' occupation of Ephesus, which would make the Sardis mint a strong contender for the series. Price dated the coins to $323-310 \mathrm{BC} .{ }^{54}$

It is clear that the number of bronze issues from the mints was always much smaller than the number of silver issues. ${ }^{55}$ The denominations and weight standards of the coins are difficult to parse, given the variations in weight and diameter. Price suggested

53 Matthew 2009.
Price 1991, pp. 71, 343.
See Aperghis 2004, p. 217.
that we need to look at the weight, diameter, and type in toto in order to ascertain denomination. ${ }^{56}$

We know that Lysimachus held Sardis between 301 and 281 BC, and most probably struck tetradrachms and bronze coins here; he retained Alexander's types and struck on the Athenian standard. ${ }^{57}$ The bronze coins are particularly problematic, but five examples of a unit with the reverse of a leaping lion and spearhead below would suggest that these were probably minted in Sardis. ${ }^{58}$ Margaret Thompson believed that the mint closed in 287 when Lysimachus briefly lost control of the city. ${ }^{59}$ It appears that bronze coinage in Asia Minor "virtually ceased" for a brief time after Lysimachus' reign and was only revived by the Seleucid kings. ${ }^{60}$

From the late fourth and early third century BC, the Ephesus mint supplied a number of coins found in the excavations, including the majority of coins from the small purse hoard discussed in Section 3.2.1 (nos. 34-37). Four more mints in Ionia each supplied a coin in the late fourth or early third century BC (Colophon, no. 33; Magnesia ad Maeandrum, no. 43; Erythrae, no. 41; Leucae, no. 42); six came from nearby Cyme, nos. 30-32, a city with abundant issues in this era. Ionian mints dominated the circulation pool in Sardis; scholars have suggested that at this point, Sardis was politically dependent on Ephesus and may not have been an independent city. ${ }^{61}$

As bronze coins were rarely hoarded, we do not know how widely they circulated. It is generally thought that the circulation pool was quite local, and the mints represented in the excavations indicate trade routes. ${ }^{62}$ For the coins coming into Sardis, it is clear that the strongest trade contacts were to the west in Ionia, and not cities farther east on the old Persian "royal road"; indeed, the mints represented can even be narrowed further, to the road that connected

[^4]Sardis, Smyrna, and Pergamum (Fig. 2.6). Andrea Berlin's pottery analysis suggests that trade contactsor at least numbers of imported pottery-were fairly low for this period, even if the Sardians were aware of and producing newer shapes. ${ }^{63}$ Thus, the local nature of the coin supply and the pottery supply is in striking agreement.

### 2.2.1 Sardis as a Seleucid Mint: <br> The Third and Second Centuries BC

When Seleucus I conquered Sardis in 282 BC, he retained the city as a capital and opened a royal mint in the city. ${ }^{64}$ Since Sardis was the central point for several oikonomiai (akin to districts) and the city was the point of collection for taxes, the Seleucid kings appointed financial officers; the chief financial officer (whose title is unknown) lived and worked in Sardis. As in the time of the Lydian kingdom, Sardis' urban center was once more tied to the fortunes of the ruler, even if the ruler did not always live in the city. ${ }^{65}$ It is likely that taxes, which up until this time had mostly been paid in kind, began to be paid in coin, leading to a deeper monetization of the economy in the city. ${ }^{66}$

Unlike the other diadochs, Seleucus did not put his portrait on his coins (at least not those from Sardis), although he did put his own name on the reverse. It is at this point that the king centralized economic control of the cities of his kingdom; it may be that he drove out the satrapal coin issues that had been minted in Sardis. However, it is likely that many of Seleucus' coins were never issued, as there were still large numbers of bronzes of Lysimachus, Pergamum, and Rhodes in circulation. ${ }^{67}$ Coins of Lysimachus and of Pergamum were found in Sardis. We have a notice (Pseudo-Aristotle, Oec. 1345b) ${ }^{68}$ that the setting of the weight standard and volume of minting was a

63 Berlin 2016, pp. 354-56; Berlin in Berlin and Kosmin, forthcoming.

64 For a history of Seleucid Sardis, see Kosmin in Berlin and Kosmin, forthcoming.

65 Ma 1999, pp. 135-36.
66 Aperghis 2004, pp. 29-32.
67 Golenko 1993, p. 87; Aperghis 2004, p. 233.
68 The source is of disputed date, but likely early in the Hellenistic period; Aperghis (2004, p. 135) prefers a date for this section of the Oeconomia of ca. 275 BC.
royal prerogative, at least in the case of gold and silver coins. ${ }^{69}$ We are less certain whether bronze coins were minted at the behest of the local community, although the royal devices on them should show that Seleucus paid for the minting of these coins as well..$^{70}$ As can be seen in the excavation coins, Seleucus's Sardian bronze coins were not the only bronze coins circulating in Sardis, although examples from the furthest eastern mints are missing from the deposits. On the other hand, a small hoard from Gordion shows that Sardis coins were circulating farther east. ${ }^{.11}$ In order to simply give a broad suggestion on the pattern of exchange for the eras examined I will break down the mint of origin for the coins found on the site by the era of their minting. I understand that the coins of the third century BC could have been brought to the site at any point after their minting and we do not always have information on how soon the coin was lost after it arrived in Sardis. ${ }^{72}$

Brian Kritt suggested that bronze coins, unlike gold and silver coins, were struck to local standards. ${ }^{73}$ The few surviving examples of the bronzes of Seleucus I in the excavation finds mean that Oliver Hoover is uncertain if the Medusa-bull coins are of the

[^5]72 See discussion above, and Newton 2006.
73 In Houghton and Lorber 2002, II: 5; see also Mørkholm's (1991, p. 12) reluctance to give weight standards for bronze denominations, due to the loss of bronze in excavation coins complicating the picture. He did suggest three denominations weighing $1.5-2.5 \mathrm{~g}$ ("half"); $3.5-4.6 \mathrm{~g}$ ("unit"); and $6-8 \mathrm{~g}$ ("double") (p. 115). These weights only sporadically line up with the weights of bronzes recorded by Kritt in Houghton and Lorber 2002, II: $7-9$. Kritt's theory is complicated by the apparent variation in weights across the Seleucid reigns, which do not clearly show any consistent weight standard across the Seleucid issues (see Fig. 2.12). The results lead to choices such as "denomination B or C" or "denomination C or D" in the Houghton and Lorber 2002 catalog. Perhaps we should rely, as Mørkholm suggested, on flan diameters. The smallest denomination would be $10-12 \mathrm{~mm}$, the medium 1417 mm , and the large $20-23 \mathrm{~mm}$.
smallest or next-smallest denomination (nos. 6970). ${ }^{74}$ Although the diameters diverge only slightly, the weights of the excavation coins vary from 1.83 to 2.45 g . Coins in collections, which have diameters from 14 to 16 mm , have a median weight between 2.5 and $2.99 \mathrm{~g} .{ }^{75}$ Variations in weight are known from other mints. ${ }^{76}$

We are uncertain how these coins were valued in relation to the many civic or municipal coinages circulating in western Asia Minor; it is possible that the types as well as the size helped the ancient user. ${ }^{77}$ Hoards show that the coins from the royal mint could circulate widely, unlike the civic coins, which tended to remain within the city's orbit. ${ }^{78}$ What is striking is the western orientation of the origin mints. Clearly, Sardian trade was focused on the Aegean coast, as coins from Ilium to Miletus are found in the excavations, with fewer coins from interior mints (Fig. 2.7). ${ }^{79}$

After the death of Seleucus I, the mint opened in earnest; however, the only coins from the excavations are coins of the smaller denomination minted under Antiochus I, and Hoover was uncertain if these were minted in Sardis or Smyrna (no. 72). Perhaps the number of examples found in the excavation, both in Johnston's catalog and here, would throw the balance to Sardis.

The Apollo/tripod coins from the reign of Antiochus II (261-246 BC) found in the excavation all came from the mint at Sardis. Otto Mørkholm called the series "very extensive," as such coins are found all over Asia Minor, into the Propontis. ${ }^{80}$ Two denominations of Antiochus II were found in the excavations: denomination B or C and denomination D. The latter shows either a cithara or a tripod (this is the type also on the larger denomination). Coins

[^6]of denomination D are between 12 and 14 mm , and 1.50 to 3.41 g . The larger denomination is only slightly larger, with diameters from 15 to 17 mm and weights from 3.10 to 4.79 g ; the reverses are exclusively tripods. Once again, a small pool of fairly local civic coinages reinforces the Seleucid finds: coins from the second half of the third century BC from the mint at Ephesus were found on the site (M7 GR 85).

Coins from more distant mints appear during the reign of Seleucus II (246-225 BC). The mint at Sardis is represented by denomination $C$ coins (nos. 80, 81); Seleucia ad Tigrim produced a small (denomination D) bronze that could be recognized by its beveled edge (no. 83). And, for the first time since the Archaic period, a precious-metal coin appears in the finds (no. 82, a drachm). I suggested the mint as Antioch, although the control mark (see App. 2) is not found in Houghton and Lorber. ${ }^{81}$ Unfortunately, the coin came from a later Roman dump and can tell us nothing about the context in which it was brought to Sardis and subsequently lost. Also from this time period comes a fine bronze of Ptolemy III or Ptolemy IV, minted in Alexandria (no. 65.1), one of the two Hellenistic coins found on the site from this distant mint. ${ }^{82}$

Achaeus minted coins with his name on the reverse and the head of an archaistic Apollo on the obverse, mimicking his Seleucid king (Apollo was claimed as the father of Seleucus I; Justin 15.4). ${ }^{83}$ By using this type, Achaeus might have been arguing that he was the legitimate Seleucid king or trying to bolster trust in the new issue, as the coin type was already familiar to users. However, he also referred to his new ally, Ptolemy IV, in the eagle reverse (nos. 84, 85). ${ }^{84}$ Two of these bronze coins were found at Sardis; one came from Hellenistic occupation layers in the "ByzFort" trenches that could be dated no closer than the third century BC. Both examples were countermarked with a horse head in a circular stamp, a product of the reopened mint under Antiochus III.

During his reign, bronze coins were issued in several series in five denominations; these are the

[^7]most common Seleucid coins found in Sardis. Up to twelve of the coins found came from the mint at Sardis (nos. 86, 87-90); three were from Antioch (nos. 91-92). Hoover suggested that one small bronze in the Afyon Museum (Apollo/Apollo testing arrow, but denomination D) was minted in Sardis. ${ }^{85}$ Since there were three such coins found in the excavations (no. 90), it is now very likely that the mint was correctly seen as Sardis.

Johnston identified thirteen coins as coming from the mint at Sardis under Antiochus Hierax. ${ }^{86}$ These coins have been reassigned to Antiochus III. ${ }^{87}$ Two coins, one from the earlier excavations (for which, see note in catalog, no. 79) are from the smaller denomination, and carry the head of Tyche, turreted and veiled, with a reverse of a tripod and the name of Antiochus. Hoover was uncertain of the mint, but called it "probably" Sardis, and assigned it to Antiochus III. ${ }^{88}$ That designation must be changed to "almost certainly" from Sardis, as one of these coins was excavated from the Hellenistic layers under the Synagogue and the other was turned in by a local resident.

The earliest coin from the mint at Rome found on the site dates to ca. 211-ca. 208 BC (no. 67); we can only speculate why it was brought east (a second coin from Rome, no. 66, cannot be dated this closely, only to the late third to first centuries BC). The coin comes from a large issue of bronzes struck during the Second Punic War, as the weight of bronze coins dropped very fast; they were overstruck, leading to a wide range of dates in the series. It was dated by the lack of any symbol in front of the prow, and the use of ROMA above. Closer to home, coins from Smyrna are dated between 240 and 190 BC (M7 GR 111; nos. 44-45); there are only a few for such a mint as close as Smyrna, testifying to the number of coins pouring from the Sardis mint under Antiochus III.

Hoover lists "notable provenances" for some of the bronze Seleucid coinages: coins from Sardis appear in Gordion (Hoards I and V), Cabyle, Gediz, Antioch,

[^8]Tarsus, Akko, Marisa, Susa, and Jebel Khalid. ${ }^{89}$ Sardian bronze coins were countermarked in Priene, Miletus (?), Tralles, Ephesus, Colophon, Thyateira (or Mylasa), Pergamum (?), Phocaea (?), Chios (?), Olbia (?), and Cabyle. Thus, by the time of Antiochus III, at least, a broader circulation is found for Seleucid bronze coins of Sardis, encompassing Ionia, Mysia, Cilicia, the modern areas of Lebanon and Israel, and even farther east to Iran.

There are no longer any clear indications of the sack of Sardis after the revolt of Achaeus (which was described in Polybius 7.15-18). However, the economic repercussions of Antiochus' victory were severe. Ma argued that the city was fined, troops were billeted in the city, the city's gymnasium was appropriated for the soldiers' use, taxes were paid in coin, and the king made "requests" for "special contributions," also in coin. Antiochus later granted some relief for the city by providing grain, oil, and an exemption in taxes to help pay for the Laodicea festival. There is also notice of rebuilding projects in the city, so not all was bleak. ${ }^{90}$ Excavations have revealed only glimpses of the Hellenistic city and cannot yet confirm what we know from the written sources. ${ }^{91}$ The use of Sardis as a military garrison, which meant the arrival of goods to feed and equip the soldiers, testified to the economic importance of the city in the late third century BC, especially as a transit point on the road northwest to Mysia and west to Ephesus. ${ }^{92}$ Berlin's study of the pottery shows that this period was (newly) characterized by imported pottery (Pergamum, Ionia, the southeast Aegean, Parthia, and Phoenicia) and wares such as wine and perfume vessels, suggesting the trade contacts (which are only hinted at in the coinage) and the prosperity of the city after it had recovered from the siege. ${ }^{93}$

Second-century BC coins show the heavy reliance the city had on coins from Pergamum (Fig. 2.8), as perhaps we can expect due to the changed political

[^9]landscape, but the almost complete driving out of coins from any other mint is a little surprising. Interestingly, the trade of coins was not reciprocal, for Voegtli reported no Sardian coins from the Pergamene excavations. ${ }^{94}$ Because of the new center of power, the traffic along the east-west trade road (which would have brought coins from Ephesus to Sardis) was diminished in comparison to the major movement northwest-southeast. And a new policy of selling grain locally, to convert it to cash in order to pay taxes, also changed the monetary picture in Sardis-for unlike the Seleucid rulers, the Attalid kings preferred to keep the state out of large grain purchases. ${ }^{95}$

For one second-century BC context, the pottery shows that there need be no long lag between the minting of a coin in Pergamum and the use of the coin in Sardis (no. 21.1, Athena/ivy leaf, dated 260-197 BC , found with latest datable material of 165 BC ). ${ }^{96}$ Note that Johnston preferred a more compact minting sequence for the Pergamene coins, as she thought that the importation of the Pergamene coins ended when the Sardis civic mint produced the Herakles/Apollo and Apollo/club coins, after $133 \mathrm{BC} .{ }^{97}$ Since I argue that the date of the opening of the Sardis civic mint occurs in the third century BC , there is no longer any need to compress the Pergamene sequence.

In David MacDonald's study of the coins of Aphrodisias, he noted several patterns in Hellenistic cities: Aphrodisias was unusual because it had no mint until late in the era. Thus, most of the Hellenistic coins found in the city were from non-local sources, a situation found also in the excavations at Delos and Megalopolis. The second pattern is found at Sparta, Assos, and Priene, which provided coin for many of the surrounding cities. The third pattern is found at Sardis, which produced both regal and civic coins. Here, the local mint dominates the finds, and other coins trickled in from nearby cities. In this, Sardis was much like Athens, Antioch, and "to a lesser

[^10]extent" Pergamum and Tarsus. ${ }^{98}$ With the evidence from the modern excavations, we can now say that the numismatic profile was indeed much like that of Athens, at least for the second century BC, which shows almost only locally-produced coins from the excavation. ${ }^{99}$

### 2.2.2 The Problem of the Opening of the Civic Mint for Bronze Coins at Sardis

According to the treaty formed after the Battle of Apamea, Sardis passed from Seleucid control to be ruled by the Pergamene kings until Attalus III willed the city to Rome in 133 BC . Pergamum remained an important source for bronze coins in the late second and firstcenturies BC(Figs. 2.8,2.9). Other nearbycities provided smaller numbers, with only one coin from Ephesus from this era. Yet coins from farther afieldBithynia, Adramyteum, and Alexandria Troas-also appear in small numbers. The same situation is seen in the coins reported from excavations at Pergamum, where excavators noted the majority of coins from foreign mints came from nearby: mostly Elaea, and other cities in the area controlled by Pergamum or the "Mysian-Lydian hinterland." However, a few coins also came from farther away, even Egypt, but the excavators still saw the cities of Atarneus, Gambreion, and Germe as dominated by Pergamene influence. ${ }^{100}$

A major problem in understanding Hellenistic Sardis is deciding when the civic mint opened. ${ }^{101}$ Most numismatists peg the opening of the civic mint at Sardis to before 133 BC, following Barclay Head in BMC Lydia; he suggested that the issues should begin in 189 BC, when Sardis passed into the hands of the Attalid kings. ${ }^{102}$ Mørkholm agreed in general, noting

[^11]102 Head 1892b, p. xcviii.
that municipal coinages as a whole arose after the Peace of Apamea. ${ }^{103}$ Price-who concentrated on silver issues and not bronze coins-also supported a date in the 180s BC due to the presence of an "Alexander" tetradrachm in the Larisa Hoard, which he suggested closed in the 160 s. ${ }^{104}$ Johnston preferred to date the civic coins to after 133 BC ; she thought the coins were produced only after there was neither another supply, nor any Attalid control of the mint-only nominal Roman control of the area. ${ }^{105}$ Thus, scholars based their arguments on the date of the opening of the civic mint on the reason why coins were struck and the possibility of the need for royal permission to strike. To bolster these arguments, scholars turn to metrical, stylistic, and iconographic parallels, and archaeological or contextual information. I will examine each in turn, along with technical data about the making of the coin flans, and I suggest that we should consider a date in the third century BC.

The reason for a city to produce bronze coins is a matter that is still debated. The explanation for the creation of such coinage, the costs of which are borne by the city, varies, with explanations centering on market demands for coin in order to facilitate smallscale transactions, the ability to pay taxes, profit for the city, or civic pride. A secondary need may have been to provide soldiers with small change for local purchases. Although Lydia was home to the earliest coinage, the Macedonian conquest of Asia Minor and the resulting urbanization and need to develop infrastructure drove the demand for coin in the area. ${ }^{106}$ As noted above, regal coins co-existed with civic coinages, struck at a wide variety of mints, leading to what Richard Ashton called an "exuberance of emissions" which peaked in the first century BC. ${ }^{107}$

From the earliest times, the precious-metal coins from the mint at Sardis carried the emblems of the ruler. The change in regimes was always marked by

103 Mørkholm 1984, p. 94; he did not specifically mention Sardis.
104 Price 1991, p. 321.
105 Buttrey et al. 1981, p. 79.
106 von Reden 2010, pp. 32-33; Meadows 2014, pp. 188-91.
107 For the reasons why bronze coins were invented, see e.g., Harvey 1989, pp. 80-85; Harl 1996, pp. 110-11; Meadows 2002, p. 126; Lightfoot 2002, p. 239; Reece 2003, p. 142; Matthew 2009; Bransbourg 2011, pp. 87, 97-98; Ashton 2012, p. 201.
the change in systems, weights, and types, beginning with the Persian rulers. The Persian satrapal coins themselves may have been slowly replaced, according to Susan Sherwin-White and Amélie Kuhrt:
[as a] result of a deliberate centralising policy emphasising the chief authority of the king alone, who is the source of royal money, although it is a moot point whether Persian satraps were able to strike coins without royal authorisation. If so, the Seleucids abandoned an Achaemenid practice which had allowed satraps in western Asia Minor to mint in silver and bronze, usually to meet military expenditure. ${ }^{108}$
This argument reveals the authors' understanding of why bronze coins were minted by the Seleucids: to pay the army. Other scholars stress the need for coin to pay tribute or taxes. ${ }^{109}$ Since Sardis was a royal capital from 282 to 189 BC , we would expect to find soldiers stationed here, although we are not certain that they were paid in bronze coin; nor is it certain that taxes were paid in low denominations. It is clear that inhabitants of the city were used to using bronze coin by the second century BC, but we cannot use an argument about why bronze coins were minted as an argument to decide when bronze civic coins were minted.

Most scholars also argue that permission to mint bronze coins was an integral part of the authority of the Seleucid kings. ${ }^{110}$ Two crucial pieces of their argument come from 1 Maccabees 15:6, where Antiochus grants permission to Simon to mint coins (there is no evidence for such a coinage from Simon), and [Pseudo-Aristotle] Oec. 1345b, where the king is given absolute authority over the minting of coin, at least over gold and silver coins. ${ }^{111}$ Yet since bronze coins were issued from "communities from Babylon to Sardis," it appears that the Seleucid king allowed the cities relative freedom to produce whatever bronze coins they needed, whenever they wished. ${ }^{112}$

108 Sherwin-White and Kuhrt 1993, p. 23.
109 Aperghis 2004, p. 213.
110 e.g., Hoover 2004, pp. 486-87.
111 See Martin 1985, pp. 242-43; cf. Meadows 2001.
112 Sherwin-White and Kuhrt 1993, p. 63; cf. Aperghis 2004, pp. 119, 131, who preferred an earlier date for the closing of the satrapal mints.

David Magie argued that cities had the freedom to strike at any time, because "this was primarily a practical concession to convenience, for their coins, which were of bronze and of low denominations, were evidently intended only for local circulation." ${ }^{113}$ That is to say, civic coins were minted for local needs, and may have sprung from the desire of local aristocrats to dignify their city. It is not clear that they would need permission to strike an issue, especially if the city magistrates paid for the minting. The officials would have been able to impose fines or other penalties to raise money for the city, but any income would have to have been promptly dispersed-especially after 133 BC-for ambassadors, architects, religious festivals, or sacral officials. Most likely, city magistrates paid for their own expenses, and notices of benefactions become regular enough that it is probable that such gifts to the city came to be expected as part of the duties of the office, or even the means by which candidates were elected. ${ }^{114}$

However, the important question remains of how the city officials would decide when they would mint the coins. It is generally thought that the city must have been a polis, or have had autonomous status. ${ }^{115}$ Yet Sviatoslav Dmitriev argued, "The minting of coins by a Greek city did not inevitably demonstrate that the city was autonomous"; the city could mint civic issues while ruled by a king. ${ }^{116}$ In this, Dmitriev is following the argument of Thomas Martin, who effectively decoupled the issue of sovereignty and the right to coin, especially for bronze coins. Martin reasoned that the early diadochs (especially) only cared about obtaining gold and silver, which they would mint to pay their troops. They ignored bronze coins as "small change in purely local use," even if the cities were in need of small change at this point due to the level of monetization. ${ }^{117}$ Polis or not, scholars are still uncertain if the city needed special permission of the Seleucid or Attalid overlord to strike a bronze coinage.

[^12]The scholars who support the need for royal authority to coin suggest that the placing of the head of the ruler on the obverse changed the balance of the equation, so that by the time of the diadochs, minting became an exclusive royal prerogative, though these rulers could give permission for occasional "autonomous issues." ${ }^{118}$ E.T. Newell argued for Antiochus III, who was willing to allow cities permission to make autonomous bronze coins. ${ }^{19}$ While Martin conceded that such a coinage might have become a symbol of the sovereignty of the city, it is not at all clear that civic coinages carried the same symbolic function as coins with the head or name of the ruler. ${ }^{120}$ Thus, he argued, we can dispense with the formula articulated by Henri Seyrig that only free cities could mint autonomous coins, as the kings wished to keep the profits from minting as their exclusive prerogative. ${ }^{121}$ Nor did Mørkholm see a conflict between the minting of royal bronze coinage and the simultaneous minting of municipal bronzes; he stressed the profit to the Seleucid king from such a measure. ${ }^{122}$ Fundamental to the discussion on sovereignty and civic coinages is an inscription from Sestus dated to the late second century BC, which names a certain Menas (OGIS 339). In it, Menas is honored for soothing city pride in the types placed on the coins and for overseeing the minting of bronze coin primarily to generate profit for the financially stricken city. ${ }^{123}$

While Martin emphasized the importance of profit to the local city in this inscription, Andrew Meadows suggested that the notice about the choice of coin type was "a reaction to the way in which civic coin types were beginning to slip out of the sphere of civic control" and into the hands of the men in charge of the minting. If so, then the choice of coin types by private citizens is a "curtailment of the normal prerogatives of a sovereign state." ${ }^{124}$ Types of purely local interest,

[^13]combined with local weight standards, should show "something more locally driven, at least at the level of execution." Meadows maintained that the king might issue a "limited grant of the right to issue bronze coin, with limited freedom to choose a reverse type." ${ }^{125}$

By the second century BC, cities were accustomed to receiving grants in order to strike civic coinages, especially as they developed civic institutions such as councils and assemblies. ${ }^{126}$ Combined with "a reduction in flow in royal coinage" as Rome became more involved in the East, cities began to mint their own coins that carried neither a royal portrait, nor a legend noting the royal patron of the issue. ${ }^{127}$ Richard Ashton agreed with Meadows that the situation was somewhat fluid up until the second century BC, but argued the opposite: the Seleucid monarchs, influenced by the Roman example of control over their subsidiary mints, began to impose such controls in the East in the second century BC. ${ }^{128}$

It is well known that although Seleucid preciousmetal coins were minted to the Attic standard, bronze issues across Asia Minor varied widely in their weight standards due to local control of the minting. ${ }^{129}$ If the same weight standard is found in neighboring cities, it is thought that those cities cooperated in order to facilitate trade. However, the city may have changed the weight of the coins to reflect new political or economic alliances. ${ }^{130}$ The period of Attalid control seems especially to be a period when the kings allowed the local elites in the cities to make decisions unencumbered by much royal bureaucracy. ${ }^{131}$

Sardis minted at least nine different obverse and reverse pairs without the name of a king. I will concentrate on two series here, as they were by far the most numerous type-pairs to come from the mint: Herakles/Apollo (no. 52) and Apollo/club (no. 55). As noted above, Head preferred a date of 189-133 BC

125 Meadows 2001, p. 60.
126 Meadows admits that bronze coins are only dated by links to dates of supposed silver issues or by stylistic dating, making the dates of the coins problematic (2001, p. 60).

127 Meadows 2001, p. 62.
128 Ashton 2012, p. 192.
129 e.g., Aperghis 2004, p. 223.
130 von Reden 2010, pp. 65-68.
131 Thonemann 2013, pp. 12-13.
for the opening of the civic mint for bronze coins; he posited such a date because of a bronze coin (now discredited) carrying the legend A $\Theta E N A \Sigma$ NIKНФОРОҮ $\Sigma A P$, a supposed Sardian copy of a Pergamene issue. He also stated, contrary to most modern scholars, that coins with the full names of magistrates could be found among the earliest issues from the city. ${ }^{132}$ Johnston argued that "there is no obvious overlap between the Pergamene coinage of the earlier part of the second century" and the Sardian bronze coins; there were no well-dated Lydian examples to use as stylistic and technical parallels; nor were there any archaeological contexts to draw upon to provide a date. Since there were, at her reckoning, more than sixty known monograms for the Apollo/ club and over seventy names or monograms for the Herakles/Apollo coins, both series must have been struck over a number of years. ${ }^{133}$ If the authorization came from the annual archon, then the issues may have been struck for almost a century-or even longer-for the Herakles/Apollo series, which also contains anonymous issues.

The coin blanks are thick, with the average mean of $15-17 \mathrm{~mm}$ for the diameter of the Herakles/Apollo and $13-15 \mathrm{~mm}$ for the Apollo/club series (Fig. 2.10). The coins that have magistrates' names on them comprise a smaller total than those with monograms; the differences in diameters between the groups were statistically insignificant, given the small number of examples. Since the chart only includes excavation coins, the weights vary more than the diameters; ${ }^{134}$ the use of the name or the monogram on the Herakles/Apollo coin does not appear to influence the weight of the coin, which varies between 5 and 7 g (Fig. 2.11). Normally, the die axis is 12. A significant percentage of these coins have a club in an oval punch as a countermark on the obverse. They also can be recognized by touch as having a concave reverse, the product of a convex die.

132 BMC Lydia, p. xcviii; e.g., Thonemann 2016, p. 132.
133 Buttrey et al. 1981, p. 80.
134 As the coin gets worn the thickness suffers much more than the diameter, since people rub the surface of the coin or depositional forces such as water erode the faces of the coins much more than the thin edges.

Far fewer Apollo/club coins survive than Herakles/ Apollo coins, both in the M7 catalog and the current excavations. It looks as if the Apollo/club was the smaller issue. The coins themselves are slightly smaller than the Herakles/Apollo coins, as the weight peaks range from 3 to 4.5 g ; all of them have a magistrate's monogram, but none carry a full magistrate's name, nor are any countermarked. The die axes fall between 4 and 8, though there is more variation here than in the Herakles/Apollo group. Thus, given the change in weight, diameter, normative die axis, and the use of the convex die for only one of the series, it appears to me that these two groups of coins were minted at different times.

Weights for the bronze coins minted in Sardis for the Seleucids varied slightly by century (Fig. 2.12). It is possible that the Herakles/Apollo could act as a larger denomination of D/E for Antiochus II's coins (second series), but this denomination is already present in the same series (B/C). In short, there is no comfortable spot for the Herakles/Apollo coin in the Seleucid system. The Attalid weight standard appears to use the earlier Seleucid system, but the mint mostly struck a one-unit coin in the third to early second century BC , about 3.88 g , with smaller denominations of half and quarter units of ca. 2 and 1 g , respectively. ${ }^{135}$ The Athena/ivy leaf coins from Pergamum present in the Sardis excavations function as a half unit (at Sardis, a mean of ca. 1.95 g ); the Athena/serpent coin functions as a one-unit. ${ }^{136}$

The Apollo/club coins do appear to fall into denomination B/C (under Antiochus II) or C (under Seleucus II) or could even be tied to the Attalid oneunit coin. The Herakles/Apollo might parallel the Attalid two-unit (?) coin. Nevertheless, the result is not clear; the coins appear only to tell us that they were not obviously minted to conform to the weight of Seleucid royal bronze coins, nor to the bronze coins coming from the Pergamene mint. Mørkholm pointed out that since bronze coinages are token coinages, the weights of the coins do not have to remain within any particular precious-metal system, "economically

[^14]speaking, although they may have a psychological effect on the public using the coins." ${ }^{" 137}$

In terms of diameters, the results are similar. The Apollo/club falls into the range for "denomination C" for Antiochus I and Antiochus III and possibly the Attalid "unit"; the Herakles/Apollo finds fewer slots to fit into, perhaps "denomination $B / C$ " for Antiochus II and "denomination C" for Seleucus II (Fig. 2.13). In other words, the Sardis coins function as do most bronze coins of the period, with changing weights and diameters making their relationships to any other bronze series minted unclear.

Stylistic analysis and iconographic study of the coins might help us understand a bit more about the milieu in which the coins were struck, although I would not want to base secure dating arguments on either argument. Johnston noted that "there are no apparent [stylistic] affinities between the coins of the handful of cities in the area" that were minting in the second and first centuries BC. ${ }^{138}$ Nevertheless, we can perhaps make some headway with iconographic parallels. The Apollo on the Apollo/club coin is archaistic: Apollo's hair is rolled up alongside his head and is gathered into a large bun at the back of his head. Two long locks of hair trail down his neck. He is given a "Greek profile" with high cheekbones and a long neck. Although this head does not copy any particular Apollo on Seleucid coins, it is close in style to the archaistic heads found on bronze coins of Antiochus III from the mint at Sardis. ${ }^{139}$ The type was revived for denarii minted for Cassius, with Servilius as his legate. These were minted in a traveling mint in Asia in 43-42 BC (RRC no. 505.3). As is common for Hellenistic coins, no legend is placed on the obverse.

The reverse shows the club of Herakles surrounded by a wreath, perhaps of celery or parsley, although it is commonly called oak. The leaves are spiky and not particularly oak-shaped. ${ }^{140}$ The celery/parsley wreath was introduced to the Nemean Games by Herakles and was also a prize for the winners at the Isthmian

[^15]Games (Pind. Olympian 13, Isthmian 2; Plut. Quaest. Conv. 5.3), although at least by the time of Augustus, it was also associated with Apollo. ${ }^{141}$ On the coin, the legend "of the Sardians" is shoehorned into the area between the club and wreath; a magistrate's initials are almost always found at the break in the wreath.

There are only a few parallels for a club reverse: coins of Antiochus I from the mint at Ai Khanoum, ${ }^{142}$ too far away to have an impact; and a coin from Antiochus III's mint at Tyre, ${ }^{143}$ another unlikely source of inspiration. Clubs appear with a bowcase or caduceus on the reverses of fourth-century BC bronzes of Blaundus and other unspecified mints in western Asia Minor. Only four times does the club appear by itself in the type on bronze coins: the city of Tarsus minted such a reverse, though anepigraphic and with the same spiky-leaved wreath, for Antiochus IV. The obverse depicts a cornucopia. ${ }^{144}$ A slightly better parallel shows the club surrounded by the name of the city on coins conventionally dated to the second or first century BC from Apollonis (Lydia); the obverses feature a Macedonian shield. ${ }^{145}$ From Heraclea ad Latmum, a laurel wreath surrounds the club; the coins are dated to the early second century BC or later, and a second type combines the club in wreath with a bearded Herakles, lionskin knotted around his neck. ${ }^{146}$ Finally, from Alinda (Caria) a coin depicts the head of Herakles, clad in his lionskin; on the reverse is a spiky-leaved (?) wreath enclosing both the name of the city and the club of Herakles capped by the lionskin. ${ }^{147}$ It is conventionally dated to the second century BC due to the wreath; another issue from the same city has the head of a laureate male combined with a wreath and club on the reverse. ${ }^{148}$ Thus, for the Apollo/club coin, the best iconographic and stylistic parallels come from coins conventionally dated to the second and first centuries BC.

[^16]The second series depicts a head of a beardless Herakles; unlike the heads normally found on the Early Hellenistic coins, Herakles does not have his lionskin pulled up over his head, but leaves it knotted around his neck. Instead, he sports a laurel wreath. The die cutters emphasize his hulking physical presence, sometimes to the point of making him appear thuggish. The head is very different in style from the Seleucid Herakles, and very different from the other gods on the Sardis coins who retain their Hellenized profiles. As with the other series, there is no legend on the obverse. We do find the combination of lionskin scarf and somewhat brutal features in mid-third-century BC bronze coins minted by the city of Heraclea ad Latmum (as noted above, with a club in wreath reverse). ${ }^{149}$ Occasionally, later rulers will show themselves with the lionskin knotted around their throats; these depictions also come from farther north and east than Sardis. But the combination is unusual. The coin type was revived briefly in Sardis during the reigns of Augustus (see note on coin 148.1) and Tiberius.

The reverse matches Apollo with the Herakles obverse, the inverse of the Apollo obverse and Herakles-themed reverse of the first series. The nude Apollo stands frontally, but looking right. His left arm hangs in a relaxed manner by his side, while he bends his right arm at the elbow to hold a bird. The numismatic literature describes the bird as a raven or crow, the messenger of Apollo. However, the hawk is described as being Apollo's messenger, in the Odyssey (15.525) and in Aristophanes' Birds 516. ${ }^{150}$

On the best-preserved specimens, Apollo can be seen sporting the same archaizing hairstyle noted on the Herakles/Apollo coin. The legend "of the Sardians" is placed between Apollo's left arm and a filleted laurel wreath that encloses the reverse. Most of the coins carry a monogram of the moneyer's name beneath Apollo's outstretched hand; some carry instead the full name of the moneyer. I doubt

[^17]that the coin reverse depicts a cult statue of Apollo in the city, but his pose-supporting the bird on his outstretched hand-is supposed to evoke the image of Zeus Lydios, also seen on coins from the mint at Sardis, who elevates an eagle (cf. no. 51). Apollo was a familiar Seleucid type, although he is portrayed on Seleucid coins as leaning on a tripod or sitting on the omphalos. It is likely that the standing Apollo is a version of the Seleucid leaning Apollo, since the type is adapted for other city reverses.

Wreaths enclosing reverse types suddenly appear in Lydia on bronze coins conventionally dated to the second century BC. It is generally thought that wreaths appeared on coins due to the popularity of New Style Athenian tetradrachms, that is, after ca. $160 \mathrm{BC} .{ }^{151}$ All the Lydian examples have the head of a deity on the obverse and no legend. All of the reverses have the attribute of a god enclosed, usually in a laurel wreath, with the name of the city on the reverse, and sometimes monograms of moneyers. Interesting tetradrachms of Aigai of the mid-second century BC depict a nude Zeus holding out an eagle, surrounded by an oak wreath, ${ }^{152}$ a nice parallel for the Apollo type, even if Aeolis is a little distant to think of this coin as an inspiration for the Sardian bronze. A bronze type from Blaundus makes a stronger case, for, like the Sardis type, a god is surrounded by a wreath; in this case, it is Hermes holding a moneybag within an oak wreath. ${ }^{153}$ The coin is dated to the second or first century BC. This is the second good parallel between the bronze coins of Blaundus and Sardis.

The combination of Herakles and Apollo would appear to refer to Sardis as a Seleucid city. The gods who appear regularly on the bronze coins of Pergamum are Asklepios and Athena, who had important sanctuaries in the city (Herakles, although the father of the founder of Pergamum, only appeared on some silver issues of the third century BC). If the coins date to the period of Pergamene control, the types do not

[^18]appear to refer to the Attalid rulers. However, there are also significant differences between the Seleucid and the Sardian Herakles. On the civic coinage, Herakles is specifically shown as a Lydian version of the god. He may then appear as the founder of the Lydian dynasty. Herodotus noted that Agron was a descendant of Herakles; he replaced the former line of the descendants of Atys as rulers of Sardis, due to an oracle (Hdt. I.7). Perhaps this genealogy is why Herakles is shown as having the lionskin knotted around his throat, so that one could recognize him as distinct from the lionskin helmeted type preferred under Alexander and his successors. This is the Lydian Herakles, specifically the Herakles associated with Sardis. The same impulse may be why Apollo is consistently linked to Herakles and shown on the reverse with a hawk. The combination may refer to the oracle that promoted the founding of a new ruling family; the hawk emphasized that oracle. ${ }^{154}$

One technical feature of the Herakles/Apollo coins may also help narrow down the century of minting. The reverse of the coins were made with convex dies, producing a reverse that can sometimes be identified by feel alone-one can easily fit the ball of one's thumb into the concave reverse. This type of die is not usual in Seleucid bronze coins (I have found no other mention of such dies used to produce civic coinages), but convex dies do appear, mostly in coinages to the south or far to the east of Sardis. ${ }^{155}$ However, a bronze coin made with convex reverse dies was minted under Antiochus II (r. 261-246 BC), which may be when the technique became fashionable in Sardis.

Thus far, stylistic, iconographic, metrological, and technical arguments have given possibilities, and no good pointers to a date before or after 189 or 133 BC. The status of Sardis as a polis may have had no impact on the production of civic coinages, lessening the

154 Nollé (2005, p. 65) suggested that Herakles and Apollo are often linked in the East as protectors against animal plagues (perhaps still an issue for the Sardians raising their famous horses), locusts, or more generally as gods who fight as protectors of civilization.
155 Van Alfen also showed me two gold coins in the ANS collection that are said to be from Pergamum in the mid- to late 330 s, also made with convex reverse dies; it is possible that this mint technique was favored in western Asia Minor for a period of time. I also note that Weisser et al. 2014, p. 657 identifies three otherwise illegible coins from the Priene excavations as Hellenistic due to their "characteristic" concave reverse.
need to find a link between the autonomy of Sardis and the opening of the mint. Thus, we need not be uncomfortable in finding no good parallels in the weight standard of the Sardis civic coins to Seleucid or Pergamene bronze coins. On the other hand, the historical circumstances of the aftermath of the Peace of Apamea would seem to be an opportune time for a city to mint, as there was less central oversight of economic issues; this oversight became exponentially less after the area was ceded to the Romans. The iconography of the coins could speak to either the interest of Seleucid rulers or possibly a sense of pride in the indigenous founders of the Sardian city; they do not clearly speak to Pergamene control. However, there are good parallels certainly by the second century BC for some of the types. The technical production of the coins-especially the series made with convex reverse dies-finds parallels in Seleucid, and especially third-century BC mint practices.

An analysis of the archaeological contexts in which the coins were found can help resolve the issue. As noted in Section 3.2.1, a small purse was lost in a house fire in the late fourth or early third century BC, a date confirmed by the pottery found with the coins. There were no civic coins found in this purse. Additionally, a few tombs contained bronze coins of Alexander the Great and his successors, and the date of the pottery (when available) does not conflict with the late fourthor early third-century BC date of the coins. ${ }^{156}$ No civic coins are attested in tombs of this date.

Other archaeological contexts help us narrow the window of minting:

1. A small denomination coin, carrying types of Herakles and a kantharos, was found in a grave with a coin of Antiochus I; unfortunately, the coin came from Bell's reporting of early excavations, so a complete list of the Hellenistic pottery in the tomb did not survive (Grave S3). ${ }^{157}$ If the association with the coin of Antiochus I stands, this would place the coin early in the sequence of the civic mint.
2. Shear recorded four intact burials with two coins, one illegible and the other the Herakles/ kantharos Sardis civic coin. Rotroff and Oliver

156 Rotroff and Oliver 2003, pp. 15, 189, 206-8.
157 Bell 1916; see also Rotroff and Oliver 2003, p. 208.
dated the associated pottery to the first century BC. ${ }^{158}$ Although the coin can only present a terminus post quem for the archaeologist, most of the graves appear to show some correlation between the closing date of the pottery and the coin included, hence my hesitation in assigning a date to this coin.
3. A large Tyche/Zeus Lydios coin comes from another grave (Bell 1916, Grave 61). It was the only coin recorded from the burial, which appears to have been a multiple burial, given the large number of lamps and unguentaria given as grave gifts. Rotroff and Oliver noted the presence of first-century BC material, though there was pottery from earlier centuries also present ${ }^{159}$ It is apparent that the practice of putting coins in graves waned considerably in the second half of the third and second centuries BC , leading to few datable contexts for Sardis civic coins in cemeteries.
4. Hellenistic strata were dug in sector ByzFort, ${ }^{160}$ although the chronology of the strata was not always clearly separated from Early Imperial levels. It is worth noting that one Herakles/ Apollo coin (no. 52.54) came from a level that appears to have had Hellenistic finds, but was dated by the coin. Three coins, one of Antiochus III (no. 86.1), one of Antiochus II (no. 75.1) and a Dionysos/panther from the Sardis mint (no. 56.1) were all from a related Lot.
5. Berlin identified a Hellenistic dump in sector MMS/S, not associated with any architecture, but probably refuse from nearby houses. ${ }^{161}$ She dated the pottery in the dump to the mid-third to mid-second centuries BC. Associated with the pottery were seven Hellenistic coins, four of which were legible: a coin of Antiochus III, minted at Sardis (no. 90.2) dating 213-203 BC (?); one from the mint at Pergamum (no. 23.5) dating between 215 and the early second century BC; and two

158 Shear 1922, pp. 401-3; Rotroff and Oliver 2003, pp. 204-5.
159 Bell 1916; Rotroff and Oliver 2003, pp. 189-90.
160 ByzFort 85.11 Lots 2 and 3, "red gravel."
161 MMS/S 94.2 Lot 30; Berlin in Berlin and Kosmin, forthcoming.

Herakles/Apollo coins (nos. 52.114, 52.130). This context of the mid-third to mid-second century BC provides welcome reinforcement for the coins in ByzFort.
6. A civic coin was found in the upper Hellenistic fill of the Theater (no. 52.46); noted above in Section 3.2.3, Berlin dated the pottery of that fill to $175-150 \mathrm{BC} .{ }^{162}$ This coin, from the Herakles/Apollo series, had been worn and countermarked by the time it was deposited in the fill. The presence of the coin in a fill of this date now shows that the post-133 BC date of the opening of the civic mint can no longer hold: the civic issues can thus be dated to after the early third century and prior to 150 BC .
7. A Hellenistic fill from MD2 can be dated by the pottery to ca. 270/260-240/230 BC. ${ }^{163}$ One coin was found under a plaster floor of a room remodeled in the Hellenistic period; it was a coin bearing the types Dionysos/ forepart of lion (no. 53.1). As suggested below, this is a small denomination that could have been paired with the Herakles/Apollo denomination. The fill shows that the civic mint opened in the third century BC.
The mint at Sardis was opened for the striking of bronze coins sometime between 300 and 280 BC, when Lysimachus had coins struck. It appears to have operated on a low level for Seleucid coinages, until Antiochus II ramped up production; this is when the first convex dies are recorded for Sardian coins. The Seleucid mint produced bronze coins for Seleucus II, until the revolt of Hierax. Hoover assigns no bronzes to the mint during the reign of Antiochus Hierax. ${ }^{164}$ Indeed, there is a gap in the bronze coins until Achaeus strikes. Antiochus III resumed minting bronze coins during and after the siege of the city; these were the last royal issues to come from the mint at Sardis. ${ }^{165}$ If the civic coins were struck after 189 BC, to replace the royal bronzes which had been supplied

## 162 Berlin 2016, p. 353.

163 Roosevelt, Final Field Report: MD2 96.1, p. 3; Berlin, Compiled Report 2015, p. 37.

164 Hoover in Houghton and Lorber 2002, I: 107-11, 320.
165 For the Sardis mint in the late fourth to early second centuries, see Evans in Berlin and Kosmin, forthcoming.
to the city by the Seleucid kings, this barely seems enough time to mint a coin, have it become worn, then countermarked, before being deposited by 175150 BC (e.g., as coin no. 52.46). There does not seem to be much reason to countermark the coin after 189 but before 150 BC .

Hence, I suggest that perhaps the Herakles/Apollo coins were minted during the "gap" in royal bronze issues, when the mint was actively striking silver, and when the technology of the convex die had been introduced-that is, between ca. 245 and 220 BC , at the moment when Seleucid power faltered, consumed by inter-dynastic rivalries and external conflict. ${ }^{166}$ The striking of fiduciary bronze coins would have had the added benefit of making a healthy profit for the city at a time when taxes may not have been regularly paid. Coins of Antiochus II tend to have a die axis of 12 and are struck with straight-sided dies; the Herakles/ Apollo coins also tend to 12 o'clock positions, but the Apollo/club coins do not. On the Herakles/Apollo coins, the Apollo reverse refers to the Antiochene Apollo, but he is portrayed in a Lydian manner. The Herakles type finds its closest parallel in mid-thirdcentury BC coins from Heraclea; perhaps the types refer to the ancient Lydian ruling family in a time of political upheaval. ${ }^{167}$ The date does not contradict the coins found in Hellenistic strata in MMS/S, MD2, and ByzFort. They would supplement the civic coins from other mints found in the excavations. It is possible that the coins continued to be struck through the early second century BC, when magistrates' names were spelled out in full. ${ }^{168}$

[^19]As argued above, the Apollo/club coins are a distinctly different series, likely minted at a different time than the Herakles/Apollo coins. Unfortunately, since there are significantly fewer numbers of these coins, none were found in Hellenistic strata to help us figure out when they were minted. It is only clear that the Sardians returned to the Apollo-Herakles type pair and lessened the weight and diameter of the flan. I would suggest that when the Apollo/club coins were minted, the Herakles/Apollo coins (and other earlier issues) still in circulation were countermarked with a stamp using the reverse type of the new coin. The stamp marked the new denomination.

Johnston noted that Hellenistic denominations were "almost always distinguished by size and certain types tended to be used consistently within a coinage for certain sizes. ${ }^{1169}$ In her earlier study, she suggested that "one would like the Herakles/Apollo to be the larger and the Apollo/club the smaller denomination, but both vary considerably in weight and fabric and no consistent distinction can be made. ${ }^{, 170}$ In her later reconstruction, the Herakles/Apollo and the Apollo/ club were two different denominations, of 4 (?) and 3, or 3 and 2 chalkoi; the Herakles/kantharos coin (which must have been a very small issue) provided the third division. This set is matched at some later period by Tyche/Zeus Lydios; Dionysos/horned panther; and Dionysos/forepart of lion, though there are also few of these coins surviving. ${ }^{171}$ Johnston focused on these six type-pairs (Table 2.1).

Two type pairs were almost certainly minted around 189 BC , possibly until 133 BC . The larger denomination carries the head of Artemis, who is identified by the bow and quiver at her back; on the reverse is a standing Athena who extends her arm to hold a Nike. The magistrate's name is given in full. Only three examples have been found in the Sardis excavations, but with three different magistrates' names. ${ }^{172}$ While Artemis is surely local, the Athena
would appear on coins; thus it would appear that by the second century BC, magistrates are allowed to place their names on coins (see Ashton 2012, p. 202).
169 Johnston 2007, p. 3.
170 Buttrey et al. 1981, p. 80.
171 Johnston 2007, p. 3 n. 12.
172 M7 GR 243, 244; M13 no. 58.1.

Table 2.1 Comparison of suggested denominations, Hellenistic period, Sardis mint.

| Johnston | Denomination | Suggested Chronology |
| :--- | :--- | :--- |
| Herakles/Apollo | large | Earlier: post 133 BC |
| Apollo/club | medium | Earlier: post 133 BC |
| Herakles/kantharos | small | Earlier: post 133 BC |
| Herakles/lion | large | Earlier?: post 133 BC |
| Tyche/Zeus Lydios | large | Later: post 133 BC |
| Dionysos/panther | medium | Later: post 133 BC |
| Dionysos/forepart of lion | small | Later: post 133 BC |
| Artemis/Athena | large | Uncertain or not mentioned |
| Dionysos/Demeter | medium | Uncertain or not mentioned |
|  |  |  |
| Tyche/Zeus Lydios | large | $3^{\text {rd }}$ century BC? |
| Herakles/Apollo | medium | $245-220$ BC into 2 nemination century BC |
| Dionysos/forepart of lion | small | $3^{\text {rd }}$ century BC |
| Artemis/Athena | large (Attalid 4-unit?) | $189-133$ BC |
| Dionysos/Demeter | medium (Attalid 2-unit?) | $189-133$ BC |
| Herakles/lion | large | $2^{\text {nd }}-1^{\text {st }}$ century BC |
| Apollo/club | medium | $2^{\text {nd }}-1^{\text {st }}$ century BC |
| Dionysos/panther | $2^{\text {nd }}-1^{\text {st }}$ century BC |  |
| Herakles/kantharos | Highly uncertain, possibly early |  |
|  | small |  |

must refer to the patron deity of the Attalids, and perhaps the establishment of the Panathenaic Games at Sardis. ${ }^{173}$ The median weight of the coins is 7.98 g , equivalent to the 4 (?) unit of the Attalid system. The smaller denomination, which is likely to have been struck concurrently, depicts Dionysos and Demeter standing leaning on a long torch (no. 59). Only two examples were found in the current excavations; Johnston lists no coins of this type, and neither coin was found in a Hellenistic context. The weight, the median of which was 5.65 g , must be the Attalid 2 (?) unit. Dionysos appears on several Hellenistic and several more Imperial issues, most probably because of his protection of the rich agricultural lands around Sardis. Apollonius described the Sardians as being "special wards" of Demeter in the first century AD; she is likely here as another agricultural patron. ${ }^{174}$ The large and small denomination coins have a style that is very different from the other eight issues from Sardis; they more closely resemble Pergamene die cutting.

173 Buttrey et al. 1981, p. 81.
174 Penella 1975, pp. 308-9; cf. Sappho frag. 96.

Thus, sometime between 189 and 133 BC the use of full magistrates' names is known on coin dies of Sardis.

A small issue (only known from two coins in the current as well as earlier Princeton excavations) has the head of Herakles helmeted in a lionskin and the reverse of a lion walking right, a fly over top, the legend $\Sigma A P \triangle I A N \Omega N$ arcing over all, and the magistrate's name MENEMAXOE in the exergue (no. 54). The style of the head is very different from any other Herakles on Sardian coins, as it is long and thin, with a large, upturned eye. The median weight of the issues is 7.2 g , which does fit comfortably within the Attic 4 (?) unit denomination, although neither the style nor the iconography compares favorably to Pergamene coins. The walking lion reverse became a favorite theme for Lydian coins of the third century AD , and there exists a late first century BC coin of Amyntas with a similar reverse, although the head of Herakles shows him as bearded, not helmeted, and carrying a club. ${ }^{175}$ Johnston thought the Sardis coin was early, due to the "dumpy flan" of the example

175 BMC Galatia, p. 3, no. 9.
she found; ${ }^{176}$ the coin I identified was not nearly as dumpy. The inclusion of the full magistrate's name on the Sardian coin should place this issue in the second or first century BC. Both coins were countermarked with the same countermark, probably in Sardis (see App. 1). Neither coin was found in a Hellenistic context. The weight may place it as a double of the Apollo/club issue.

Johnston suggested that two issues were probably minted as a set, the Tyche/Zeus Lydios and the Dionysos/forepart of lion. ${ }^{177}$ The Tyche/Zeus Lydios coin (no. 51) would be the larger denomination, with a median of 7.15 g ; the flans are large and fairly thin. The weight and style have no obvious parallels to Seleucid coins; the weight may perhaps place this coin in the Attalid 4 (?) unit denomination. The magistrate's name is only ever given as a monogram, some instances of which are shared with Dionysos/panther and Dionysos/ forepart of lion. As Johnston noted, the types are typical of Sardis, in the depiction of the turreted and veiled Tyche and the Lydian Zeus. Two of these coins were countermarked with the club countermark (see App. 1), in Sardis in the late second or first century BC. For the smaller coin (no. 53), the reverse depicting the forepart of lion recalls, as Johnston noted, the familiar coin types of Lysimachus and his successors. ${ }^{178}$ Like the larger denomination, the flans are broad. Unlike the larger denomination, the ethnic runs in a straight line along the top of the reverse type. The median weight of these coins is 3.54 g , which may perhaps place this issue in the Attalid 1 (?) unit.

Another small denomination has a helmeted young Herakles on the obverse, paired with a highstemmed kantharos on the reverse (no. 57). While the kantharos can reflect Herakles' prodigious appetite for wine, it likely refers to Dionysos. The ethnic is broken into two parts, each one running alongside the drinking vessel; the moneyer's monogram is always present. There are no obvious iconographic or stylistic parallels to this coin. The median weight is 3.29 g , which again may possibly reflect an Attalid 1 (?) unit denomination. Because of their "dumpy" flans and some parallels between this coinage and the Apollo/

[^20]177 Buttrey et al. 1981, p. 81.
178 Buttrey et al. 1981, p. 81.
club series, Johnston suggested this functioned as a "slightly smaller denomination that the Apollo/ club." ${ }^{179}$ It is unlikely to have functioned as such, since the median for the Apollo/club is 3.75 g . As noted above, the Herakles/kantharos coin was found in a tomb that contained a coin of Antiochus I, and another one was found in a tomb which was dated by the pottery to the mid-second to first century BC . The two tombs show a wide range of possible deposition dates for this coin type.

The Dionysos/panther issue is known in fifteen examples from the modern and current excavations, none of them in Hellenistic strata (no. 56). The median weight is 4.7 g and not clearly part of any denomination, unless it is an Attalid half unit. Johnston noted that the weights fluctuated (she recorded a low of 3.83 g and a high of 6.16 g , which is not entirely dissimilar to other issues, see Fig. 2.11), and thus the coins may have been issued over a long period of time. She found monogram links with the Herakles/kantharos and the Tyche/Zeus Lydios issues. The result would be a set of three denominations. She also noted the presence of a horned panther breaking a spear in its mouth on a year $20(114 \mathrm{BC})$ cistophorus carrying the name of Sardis. ${ }^{180}$

### 2.3 The Early Imperial Era: Augustus to the Second Century

In 27 BC , Augustus created Asia as a consular province, and although Sardis was identified as being in an area of influence, or conventus, there was no provincial capital. The Roman East remained relatively untouched by Imperial bronze (or silver) coinage, as the eastern cities had been producing small change for many years. Where once numismatists called the coins minted while the cities were under Roman authority "Greek Imperials," I will use the more preferred term, Roman Provincial coinage. Moreover, where the lack of emperors' portraits on the coins were considered a measure of autonomy for the city (hence, "pseudoautonomous coins" for those without Imperial portraits), this no longer seems a valid distinction; it does not appear that the city needed permission from

179 Buttrey et al. 1981, p. 81.
180 Buttrey et al. 1981, p. 81.
the emperor to mint. ${ }^{181}$ The production of a coinage may be more strongly linked to the desires of a local aristocrat to fund an issue, as part of the euergetism that developed in the cities in the Imperial period. ${ }^{182}$ Hence, my catalog combines the coins featuring the head of the Imperial family with coins that depict a god or goddess on the obverse; I have placed these in chronological order.

Beyond the gesture that soothed city pride or announced the benefaction of a local noble, scholars are still uncertain as to why and when a city would produce an issue of bronze coins. Most scholars think that the pressure from the local markets, which needed small coin for daily transactions, is a sufficient explanation, just as in the Hellenistic period. ${ }^{183}$ Harl argued that taxes were paid regionally in bronze coin, and the bankers converted the coin into silver denominations, returning the bronzes to "the exchange tables in markets hungry for small change"; he also saw the need for bronze coin to distribute during festivals, or when emperors visited. ${ }^{184}$ Johnston suggested, at least for the later period, that bronze coins were minted for "non-economic reasons (as acts of euergetism by prominent citizens, to celebrate special events such as imperial visits or games or new civic titles). ${ }^{1185}$ Although Constantina Katsari admitted that civic pride surfaced in legends boasting that a city was "first in Asia" or in the number of neokorate priesthoods owned by the city, she did not think this was the primary reason to coin. Instead, she emphasized the profit that a mint would make on the coins, especially when "the overvalued small denominations were exchanged for silver denarii." ${ }^{1186}$ Since there were no soldiers stationed in or near Sardis, we can remove the army as the consumer and possible producer of coin. ${ }^{187}$

[^21]However, we are very much at a loss to suggest exact times when bronze coins were produced and how the city determined how large the issue would be. ${ }^{188}$ These bronze issues can be (but at Sardis often are not) issued in conjunction with silver coins.

Augustan strata are not clearly distinguished yet at Sardis. It is thus hard to gauge the economic situation of the city, but we at least hear that a temple to Augustus was built during his reign (IGR 4.1756). Numismatically, the imposition of an Imperial government changed the city greatly, although there may have been a gap between the last years of the Hellenistic mint and the opening of the mint under Augustus, which Andrew Burnett, Michel Amandry, and Pere Pau Ripollès place around $10-1$ BC. ${ }^{189}$ The issues are small and intermittent, as are all the issues through the second century AD , and usually only two or three denominations are produced. ${ }^{190}$ Two denominations are standard for the mint through the reign of Nero (one ca. 19 mm and the other ca. 15 mm ); a third, large denomination was also briefly minted under Augustus. ${ }^{191}$ Save for special issues such as the coins from "Asia" (CA coinage) of an uncertain mint, and coins from the Corinth mint, they do not fit with the Imperial bronze system; although some eastern bronze coins were reformed to do so, most coinages retained their earlier Hellenistic standards. ${ }^{192}$ The coins that were minted on a Roman standard (from the "Asia" mint) will be discussed separately.

Augustan coins from the excavation are all from one denomination ( 1 assarion), $19-20 \mathrm{~mm}$, and a little over 6 g ; that is, the coins are broader than their Hellenistic counterparts and heavier than the Apollo/ club coins, although they would fit comfortably in the Herakles/Apollo series (except one, see below). The new authority is announced by the presence of

[^22]the head of the emperor on the obverse, replacing the gods of the civic coins. As is argued below, Hellenistic coins continued to circulate for a long time; perhaps the city fathers minted the Early Imperial coins on a standard that would allow these coins to circulate in tandem with the Hellenistic coins.

There is one possible exception to the rule that an emperor's head is found on all obverses, a coin that is a revival of the Herakles/Apollo type. The current excavations unearthed a specimen with the name of Mousaios on the reverse (no. 148.1). This magistrate is recorded as a strategos in 5 BC , when an envoy was sent to Augustus congratulating him on behalf of Gaius, who had just assumed the toga virilis. ${ }^{193}$ His name appears on a coin minted for Augustus with a reverse of the Demoi of Pergamum and Sardis, which Burnett, Amandry, and Ripollès suggested was minted ca. 1 AD. ${ }^{194}$ The Herakles/Apollo coin types reappear on a coin with the names of Opinas and Akiamos, a coin which is dated early in Tiberius' reign due to the simple city ethnic. ${ }^{195}$ Although Mousaios could have served as strategos in 5 BC and later as a magistrate named on a coin from 14-17 AD, the Herakles/Apollo Mousaios coin should be dated to the Augustan period for several reasons: one is that the ethnic is found on the obverse ( $\Sigma \mathrm{AP} \triangle \mathrm{I} A N \Omega \mathrm{~N}$ ), replacing the singleword legend of Augustus's coins (EEBAETOY). On the coins of Opinas and Akiamos, the ethnic moved to the reverse and both names were placed on the obverse. The relatively broad flan contrasts with the more compact Tiberian coin. And when magistrates appear on the coins of Augustus, they are singular; on the later coins they are paired. Mousaios makes better chronological sense in the Augustan period. ${ }^{196}$

[^23]Coins of the Early Imperial period were used for a long time; this phenomenon is not limited to Sardis. ${ }^{197}$ As a result, many of the Imperial coins are too worn for identification. The Augustan-era coins that are found in Sardis do come from a variety of mints (possibly due to the intermittent striking of coin and lack of Late Hellenistic issues; Fig. 2.14). What is remarkable is that the pattern of mints resembles that of the first century BC, when coins from mints to the west and northwest far outnumber coins from Lydia. This map does not include two copies in bronze (probably once silvered) of a denarius minted in quantities, and imitated in many more, depicting Gaius and Lucius (no. 218), since scholars have not suggested a place for the mint. I also understand that since the Early Imperial coins were used for so long that this map does not give a snapshot of coins in circulation in Sardis during the reign of Augustus, but thought the exercise worth doing to see a selection of mints that were available to Sardians in the Imperial period.

Since bronze coins were minted on differing standards in various cities, we would expect only local or regional coins to appear in the excavations. ${ }^{198}$ Johnston argued that local circulation was true of Anatolia, but not entirely true in Sardis in the first to third centuries, although she conceded that the largest number of mints represented in the excavation coins is found in the third century. The rough percentages of locally-minted coins she noted as being $50-80 \%$ in Troy, Priene, Ephesus, Aphrodisias, and Side, percentages which are confirmed by the few hoards we have of Roman Provincial coins. The remaining $20-50 \%$ are drawn from regional or extra-regional mints. This is in contrast to the Athenian Agora excavations, where $94 \%$ of the coins found were minted in Athens. ${ }^{199}$ The current excavations in Sardis appear to confirm Johnston's argument.

Coins from "Asia," though the subject of specialized studies, are also from an uncertain mint, likely in the province of Asia (possibly at Ephesus). ${ }^{200}$ These coins appear to have been minted on the Imperial standard and are thus given names of

[^24]denominations of bronze coins in the west. ${ }^{201}$ Katsari suggested that they were minted for payments to troops or "to cover for local deficiencies in the circulation of smaller denominations; but only in emergency cases." ${ }^{202}$ Burnett, A mandry, and Ripollès proposed that the coinage was meant to "impose a unified currency on the Roman model on the communities of the eastern Empire," an effort that did not progress beyond these coins. ${ }^{203} \mathrm{~A}$ number of these were identified both by Buttrey and in the current excavations (nos. 98, 99). Many of them are halved, a phenomenon particular to Sardis. ${ }^{204}$

Disaster struck Sardis in 17 AD in the form of a devastating earthquake. Sardis was one of twelve cities in Asia that Tiberius favored with an Imperial decree to remit taxes for five years, along with a grant of ten million sesterces to restore buildings (Tac. Ann. 2.47). Great fills that were clean-up from the earthquake and rebuilding after the event are found in the terraces in Fields 49, 55, the Upper Terrace south of HoB, and on the site of the later Bath-Gymnasium Complex. ${ }^{205}$ It appears that the city did not suffer another serious economic blow until well after the Imperial period.

Numismatically, the city responded with coins showing Tiberius raising the stricken Tyche (no. 152). In an inscription, Tiberius was called "founder of the city," ${ }^{" 206}$ and the coin legend is only slightly more subtle, renaming the city Caesarian Sardis. ${ }^{207}$ Julio-Claudian coins tend to come from local mints more often than the Augustan coins (Fig. 2.15). The current and earlier excavations report coins mostly from Lydia. Coins of the Flavian era are even scarcer; no mints other than Sardis and Smyrna could be identified in Flavian coins from the current excavations, in part due to the wear on these coins, which must have been deposited long after the first century ended. Given the amount of money spent on infrastructure, one would expect coins

201 Burnett 2011, p. 9.
202 Katsari 2011, p. 59.
203 Burnett, Amandry, and Ripollés 2005, p. 371.
204 Buttrey et al. 1981, p. 92.
205 Cahill 2015, p. 419; Cahill 2014a, p. 125; cf. Hanfmann 1983, p. 141.

206 Hanfmann 1983, p. 144.
207 For such types in Asia Minor, see Delrieux 2012.
from farther afield, but Katsari noticed the isolation of the circulation pool of Asia. She thought that the coins were traded mostly along the road systems. ${ }^{208}$

Post-earthquake Sardis was not lacking in building projects, in part due to the economic stimulus provided by Tiberius. Inscriptions record the completion of the aqueduct; ${ }^{209}$ repairs were probably undertaken in the Theater and the Temple to Hera (?) (SEG 28.928). Hanfmann suggested that the stadium also dated to the later first century. ${ }^{210}$ The monumental Wadi B Temple, which the excavators suggested was probably dated to the Julio-Claudian or Flavian period, seems more likely to be Julio-Claudian (see Section 3.3.2). ${ }^{211}$ There are modest graves in HoB and areas farther from the city center, and an impressive chamber tomb as well. ${ }^{212}$

Barbara Levick suggested that the Flavian period was one of intense road building across the province, due to the milestones found along the old "royal road" and the north-south route between Smyrna and Adramyteum. ${ }^{213}$ She also thought the province profited by the presence of legions in the northwest and on the Euphrates, necessitating the delivery of "food, drink, housing, clothing, armour and weapons," some of which may have passed through Sardis-this would have at least enriched the transporters and hospitality industry. ${ }^{214}$ Magie argued for a period of moderate prosperity in Sardis in the Flavian period, due to an inscription noting a "modest gift" of grain to the city. ${ }^{215}$

Hanfmann suggested that rebuilding the city was slow, and the period after 55 AD was a period of recession, in large part due to the lack of Early

[^25]209 See also Early Imperial waterworks at ByzFort: Greenewalt et al. 1990, pp. 155-59.

210 Hanfmann 1983, pp. 141-43; see also Yegül's reconstruction of the phasing of the Bath-Gymnasium Complex (1986, p. 5; 1987, pp. 47-49).

211 Ratté, Howe, and Foss 1986, pp. 67-68; Burrell 2004, 100-3; Greenewalt 2006, p. 176; Greenewalt 2007, pp. 743-44, Cahill 2015, pp. 421-22.

212 Greenewalt et al. 1990, pp. 161-64; for this phase in the city, see also Herrmann 1995; Rautman 2011, pp. 5-8.

213 See also Magie 1950, p. 570.
214 Levick 2004, p. 187.
215 Magie 1950, p. 586.

Imperial coins found on the site. He also noted signs of "class struggle and anti-Roman rebellion," famine, and general bad behavior in a letter to a local family by Plutarch and a letter to the Sardians by Apollonius of Tyana, if we can trust the latter. ${ }^{216}$ Arjan Zuiderhoek suggested that the tension between the haves and have-nots was widespread throughout Asia, Bithynia, and Cilicia in both the first and second centuries. ${ }^{217}$ Yet the letter to the church at Sardis in Revelation 3:1-6 (generally agreed to have been written in the late Flavian period) suggests no large-scale economic problems or civil unrest.

We know that Early Imperial coins are not common in eastern urban sites (see Fig. 2.2), reinforcing the argument that the number of excavation coins found in strata are not necessarily good indicators of economic prosperity or downturn. At Sardis, we may instead note the number of building projects occurring in the first half of the first century. Two of the largest were connected to the largest temples in Sardis: Cahill and Greenewalt suggested that the east end of the peristyle was begun in the Temple to Artemis. ${ }^{218}$ When work was proceeding on that temple, the Wadi B Temple, which was probably largely funded by the city, was erected. ${ }^{219}$ The cost associated with the building projects suggests that the Early Imperial period was not as bleak as Hanfmann proposed.

Second-century Sardis appears to have been a prosperous city: the Bath-Gymnasium Complex must have largely been completed, as a statue of Lucius Verus was erected in the halls; Hadrian visited the city twice; an inscription alludes to a temple to Hadrian; and the Artemis Temple was refurbished and probably housed the neokorate cult of Antoninus Pius. ${ }^{220}$ A statue base may record a visit of Marcus

[^26]Aurelius and Commodus to the city, possibly in $176 .{ }^{221}$ As I argue in Section 3.3.2, a votive deposit shows that new attention was paid to the Wadi B Temple. In the second half of the century, the Chrysanthina Games were inaugurated. ${ }^{222}$

Johnston dated coins with the head of the Senate/ Demeter from the Sardis mint to $80-96$, since "several examples are stamped $\triangle$ OMITI on the reverse and one reverse die (BMC 73) was also used as the reverse for Nerva," but she noted that the die engraving is "unusually high" for the reign of Domitian. ${ }^{223}$ The authors of RPC II must have disagreed, as the coin is not included in this volume, nor in the supplement (nor is it included in the online RPC for the Antonine period). The countermark is noted, but not pictured, in the BMC Lydia volume; it is noted on another British Museum specimen (and others) by Howgego. ${ }^{224}$ Although Howgego entertained a Trajanic or later date for the countermark, suggesting that it perhaps refers to a proconsul named Domitianus (?), he recognized the argument for a Domitianic date of the mark. The style of the engraving is more often seen in Antonine coins in Sardis, especially the coins of Marcus Aurelius as Caesar (see nos. 178, 184). The die cutting shows the "Sardian mint style" at its best, with large, neatly-formed letters, a single figure or object in the reverse, with much empty space, using the broad flan completely.

One phenomenon of the second (and third) century is the use of dies shared within the conventus, a mint technique that was explored by Konrad Kraft and elucidated for the Sardis mint by Johnston. ${ }^{225}$ Diesharing tends to be of the obverse dies; while shared reverse dies are certainly known, they tend to be found in specialized issues, such as medallions. The obverse die sharing means that the reverses may depict images that are of specific interest to the city of minting. By the third century, shared reverse dies and shared dies for smaller issues became more common. ${ }^{226}$ The first

221 Greenewalt et al. 1985, p. 79.
222 Hanfmann 1983, p. 129; see also honorific inscriptions from Sardis, Petzl, forthcoming.
223 Buttrey et al. 1981, p. 82.
224 Howgego 1985, p. 208.
225 Kraft 1972; Johnston 2007.
226 Kraft 1972, pp. 14-15.
shared obverse dies from Sardis come from the reign of Antoninus Pius, where Sardis shared with Daldis and Briula. Johnston also noted that she could discern one die engraver's hand from the 90s in Sardis, Hierapolis, Smyrna, Ancyra, and Tripolis, testifying to the problem of tracing die sharing-or perhaps just engravers or hubs. However, since there are no die links among these cities in the Flavian period, then it is the die engraver who moved, not the dies. ${ }^{227}$

Katsari warned that the workshop could supply cities $100-200 \mathrm{~km}$ away from the mint, and since the areas of shared dies overlaps, we "are unable to prove that the activities of the workshops affected the circulation of bronze coins. ${ }^{" 228}$ The use of workshops may have little impact on the pool of circulation in the cities. Nor does the system of workshops mean that coins circulated more widely, especially as the cities that shared a workshop might not share weight standards. She thought that the Sardis mint was unusual in having greater numbers within the excavation coins that were produced in "distant mints"-over 500 km away-but their presence could be explained by traveling merchants, especially those carrying luxury goods. ${ }^{229}$ While the mints of origin are fairly compact for the first half of the second century, the map does expand greatly in the second half of the century with coins from Rome, Alexandria, Corinth, and Anchialos, as well as distant mints in Anatolia such as Nicaea, Ancyra, and Pompeiopolis (compare Figs. 2.14, 2.15). This is the largest radius of any of the phases, from the Hellenistic period to the third century.

Coins from mints outside of Sardis present an interesting pattern in the first half of the second century as the number of coins minted outside of Sardis shows a great increase over the first-century coins (Fig. 2.16). Part of the reason why this was happening is because the number of coins produced at mints in Asia Minor increased, as did the number of cities minting. Along with second-century coins, first-century coins were still in circulation, as we can tell by the heavy wear on the latter. Many of the cities on the second-century map share dies in the third

227 Johnston 1983, pp. 60-61, 69; cf. Kraft 1972, pp. 60-62, though he found no die links.
228 Katsari 2011, p. 226.
229 Katsari 2011, pp. 226-30.
century with Sardis; almost all come from mints on the Sardis-Pergamum road and the southern route towards Laodicea. Rare coins come from mints outside of Lydia or Mysia.

It is only with the reign of Hadrian that western coins, in the shape of denarii, are more regularly found in the Sardis excavations. ${ }^{230}$ It is not entirely surprising to begin to find second-century silver coins minted in Rome, as Trajan had reduced the fineness of the denarius. At the same time, the mint at Rome produced silver coins meant for circulation in cities in the East (e.g., Caesarea in Cappadocia); the eastern cities also used newly-minted or overstruck cistophori. ${ }^{231}$ Thus, the East must have used a hodge-podge of silver coin in the second century. In Sardis, at least two bronze coins of this period were found in graves, either in the hand or mouth of the deceased. Otherwise, the coins were not found in contexts which would allow us to gauge how long they were in circulation before they were deposited. As a rule, they are less worn than first-century coins, suggesting that there are more bronze coins in circulation in the second century to supply local needs. ${ }^{232}$

Antonine coins, one of which was found in a sarcophagus (see Section 3.4.2) and eight which were found in the Wadi B Temple (Section 3.3.2), come from a much broader set of mints than the coins of the first half of the second century (Fig. 2.17). The mints are no longer mostly confined to the Sardis-to-Pergamum route. While Verus' journey took him south of Ephesus and the Sardis-Ancyra road (Hist Aug. Verus 6.9), there must have been shipments of material for the army throughout the province of Asia, leading to a wider variety of mints than in the previous half-century. However, the pattern of finds returns us to the overall pattern that Sardis saw in the second century BC, which was not found in the following centuries; that is, coins from the Aegean coast are absent and the NW-SE road seems to have suppied Sardis with its merchandise-or at least, its coins. ${ }^{233}$

230 Although Buttrey et al. 1981, pp. 129-30 lists single coins from the Late Republic through Trajan.

231 Beckmann 2012, p. 406.
232 cf. Harl 1997, p. 225.
233 See a parallel situation-where Ephesus is largely missing from the coin record in the Imperial period-in Aphrodisias (MacDonald 1976, p. 40). No Sardis city coins are reported from the Ephesus excavations, nor are any described from Sagalassus finds.

The Early Imperial phase is largely missing from most other excavation catalogs in the East: cities with a normal profile (Butrint, Corinth, Pergamum, Ephesus, and Caesarea Maritima; see Fig. 2.2), to which we can add Sagalassus, Aphrodisias, Tarsus, and Zeugma, report few coins until the time of Hadrian (except the uncertain first to third century AD category). It could be that the lack of second-century coin is due to wear on the flan, making these coins unidentifiable; but in my experience, second-century coins show much less wear than first-century coins. The normal profile cities, except Corinth, show a small peak of coins that were minted in the reigns of Nerva, Trajan, and Hadrian, dropping slightly (except in the case of Butrint) during the Antonine period. Priene, Athens, and Kenchreai show very different patterns. There are two other correspondences among the cities that do not show up in the calculations: most of the cities pull coins only from mints in their adjacent areas; silver coins very rarely appear until the time of Trajan (after which they only remain rare).

### 2.4 The Third Century

The third century at Sardis saw a new level of civic activity. For instance, the Marble Court of the Bath-Gymnasium Complex was dedicated to Geta, Caracalla, and Julia Domna, and perhaps within the complex or nearby, statues were erected for the Imperial family and other dignitaries, through Severus Alexander. ${ }^{234}$ Several other large building projects may have been completed in this century. Although Sardis supported Severus' rival Clodius Albinus, Elagabalus later funded the celebration of the Elagabalia Games. A statue base to a "world champion" boxer and pancratist shows the importance of games held here. The city could then compete with Ephesus in calling herself "the metropolis of Greece, Asia, and all Lydia," and home to three neokorate cults. ${ }^{235}$ The municipal mint, like most other mints in Asia, produced great numbers of issues, often with types commemorating local gods and heroes. ${ }^{236}$

[^27]Nevertheless, information from the city falls silent in the second half of the third century, in part due to the lack of municipal coins, as mints all over the East closed. We do hear of destruction by Goths in Ephesus, Didyma, and Miletus, and Sassanian Persians raiding the eastern part of the province. No evidence has surfaced in Sardis for physical destruction by either party, but if the Roman city wall was built at this point, it may have been in response to perceived external threats. That Sardis remained an important hub of the province is seen as in Diocletian's promotion of the city to the capital of his new province of Lydia. ${ }^{237}$

Most scholars are ready to see the issues from the mints as reflective of the movement of the emperor and especially the army, but some scholars are ready to sever the connection. They point out that Imperial or military activities do not always align with the chronology of coins coming from the mint. ${ }^{238}$ Thus, the proposed two trips that Caracalla made to Sardis cannot be deduced from new issues or types on the coins. ${ }^{239}$ The reason why coin production increased in this century is still highly uncertain. Katsari suggested that provincial governors ordered the increase due to the lack of small change for the markets. The central authority would thus explain the use of centralized workshops. ${ }^{240}$

Along with a greater number of issues produced after 195 came the opportunity for more die sharing. Sardis is one of four large workshops Kraft isolated in Asia (with coins coming from, but the workshop not necessarily housed in, Sardis, Smyrna, Ephesus, and Pergamum). ${ }^{241}$ During various reigns, coins from the mint at Sardis are linked by dies, die chains, or sometimes stylistic analysis to Acrasus, Ancyra, Apamea, Cilbiani Inferiores, Daldis, Dioshieron, Eumenia, Germe, Gordus Julia, Hadrianotherai, Hierapolis, Hypaepa, Laodicea, Maeonia, Magnesia ad

237 Hanfmann 1983, pp. 145-46: Rautman 2011, p. 8.
238 Scholars who connect the minting of coins primarily to the movement of the military and emperor: Johnston 1984, pp. 255-56; Katsari 2005, p. 267 (later modified), and Ziegler 1996. Arguing against this idea is Elton 2005, pp. 297-300; see also Katsari 2011, pp. 40, 217.

239 Hanfmann 1983, p. 145.
240 Katsari 2003; 2005, p. 267.
241 Kraft 1972, karte 1-7, 11.

Sipylum, Philadelphia, Saitta, Silandros, Stratonicea, Synaus, Tabala, Themisonium, Thyateira, and Tripolis. ${ }^{242}$ It is not yet certain if the coins were minted in one location (or several), and then distributed to the cities, or if the dies and engravers traveled to the cities to mint, although Kraft favored the latter. ${ }^{243}$ These workshops produced up to seven denominations, and probably used worn first- and second-century coins as flans. ${ }^{244}$

The workshop cities to some extent mirror the third-century coins found in the city (Fig. 2.18). The distribution of mints shows the impact of the workshop system, especially when compared to the map of the second half of the second century (Fig. 2.17). In the third century, the coins are from many more towns in Lydia, Ionia, Phrygia, and Caria; they are no longer just confined to the major transportation routes in and out of Sardis. Interestingly, coins from Ephesus are once again a large contingent, which had not been the case for many years. The map confirms Johnston's suggestion that workshop areas heavily affect circulation patterns: she predicted that the Sardis excavations would produce coins from Pisidia (Antioch) and Pamphylia (Attalia), with Bithynia and Pontus in a separate circulation pool. ${ }^{245}$ A quick glance at all the distribution maps, from the Hellenistic period on, confirms local bronze circulation pools. The greatest number of mints represented at Sardis occurs in the first three quarters of the third century. Sardis never demonstrated a strong connection to Syria, nor did many coins come from western mints. ${ }^{246}$

Mints all over the East closed between 250 and 270; after this, only Imperial mints supplied small change. The local mints may have closed because bronze coins become too expensive to produce, due to increasing inflation that drove up the prices of

242 Johnston 1983, pp. 63-66; Spoerri Butcher 2006b, pp. 97-98, 103-4.
243 Kraft 1972, pp. 15-16, 92; Johnston 1983, p. 65; Johnston 2012, p. 459.
244 Johnston 1984, pp. 249-52.
245 Johnston 2007, p. 240.
246 Contra Katsari 2011, pp. 191-92, 196. See the study of the excavation coins of Athens and Corinth with the same upsurge in the Severan period, Kremydi and Iakovidou 2015.
goods. ${ }^{247}$ Johnston argued that that the coins were not minted to provide small change since the issues were sporadic, but admitted that the large Severan issues could have been "intended to remedy a general shortage at the end of the second century." Many of the reverses refer to festivals or games, a city's status, homonoia agreements, new buildings, visits by the emperor, and benefactions to the city; they are markers of civic pride. ${ }^{248}$

By 270, billon coins replaced copper-alloy small change in all cities of the empire, and Sardis was no exception to this rule. It is not clear that radiate billon coins immediately drove out bronze coins, but they did circulate for a long time, as most are found in fourth- or fifth-century contexts (e.g., nos. 270.1, 276.2, 282.1, 288.1, 292.2, 292.7, 292.9, 292.10, 294.1, 295.1, 297.5, 297.6, 300.1, 300.3, 303.1, and see below, "barbarous radiates").

Johnston suggested that many coins were recalled and reminted ca. 200 and again ca. 260 ; at the same time, coin flans began to shrink. ${ }^{249}$ The revaluation of older coins is clear from various countermarks of value that were placed on the coins. The most common of these countermarks is CAP B, ${ }^{250}$ although no coins with this countermark were found in excavations since 1973. Sardis struck more denominations than it had in the second century, and like the other cities in Asia, the mint adjusted the module of the coins in the third century (see comments in catalog).

The first announcement of the second neokorate temple-warden granted to the city appeared on coins of the 190s, but the title did not become commonly used on coins until the early third century. ${ }^{251}$ It was then that several varieties of issues were minted, including coins with reverses showing the multiple temples of the imperial cult with the legend CAP $\triangle I A N \Omega N \triangle I C$ $\mathrm{N} \in \Omega \mathrm{KOP} \Omega \mathrm{N}$ (a reverse type seen in several cities at this time) or with reverses of Kore (?) or Zeus Lydios and the legend CAP $\triangle I A N \Omega N$ B $N \in \Omega K O P \Omega N$ (M7 GR 260-1; no. 192). The obverses bore the bust of

[^28]the Senate or Tyche, and so they are not as firmly dated as the coins carrying the obverse of Septimius Severus, Clodius Albinus, or Julia Domna. However, since all of the coins with Imperial portraits and the notice of Sardis's neokorate status are from the end of the second or beginning of the third century, it is very likely that the coins with Senate and Tyche also date to this period. They are also more stylistically comfortable in the third century, featuring squat heads and crowded and lengthier legends that are common to early third-century coins.

During the reign of Elagabalus (Burrell argued in June 221 or just afterwards)-after coins had already come from the mint with the second neokoros in the title-a third neokoros was added. ${ }^{252}$ The magistrate's name, Hermophilos (as archon), appeared on coins with an obverse of Tyche and a reverse showing the rape of Persephone (e.g., BMC Lydia p. 249, no. 89). These announce Sardis as having only two neokorate temples and Hermophilos serving as archon for the first time: A APX, B N $€ \Omega K O P \Omega \mathrm{~N}$. Archontes made up the governing body of each city (and the term probably includes strategoi); ${ }^{253}$ this body was in charge of municipal finances, and thus it supervised the minting of coins, including paying for the issue. ${ }^{254}$

Hermophilos also appeared on coins that note the change in Sardis's neokorate status (e.g., Elagabalus bust r., with the reverse of an agonistic table with crowns; or two temples, as above with TPIC $\mathrm{N} Є \Omega К О Р \Omega \mathrm{~N}, ~ Є П I ~ Є Р М О Ф І \Lambda O \Upsilon ~ A P ~ A ~ T ~ B ; ~$ BMC Lydia, p. 265, nos. 170-171). These occur when Hermophilos was serving as archon for the second time. Since archontes usually served for a year, Hermophilos's tenure in office must have occurred in $220 / 1$ and 221/2. ${ }^{255}$ Coins of Gordian III and Tranquillina from the mint at Saitta (RPC VII, nos. $234,240,241$ ), which carry the name of Hermophilos on the reverse are die-linked to coins from Sardis. Hermophilos could not have served as archon for

## 252 Burrell 2004, p. 110.

253 The problem of archons and strategoi is discussed in Bennett 2014, especially pp. 8-11, 23-27; the use of such eponyms begins in the Augustan period, peaking in the third century.

254 Magie 1950, p. 644; Mitchell 1993, p. 88; Katsari 2011, p. 211; Bennett 2014, p. 39.

255 Dmitriev 2005, p. 61.
both of these cities, but Butcher suggested that the name could have been used simply as a chronological indicator of the year the coin was minted. ${ }^{256}$

Coins from the current excavations can help shed light on the problem of the award and withdrawal of the third neokorate. A rare coin has on the obverse a bust of Elagabalus with his normal titulature (AYT K M AYP. ANT $\Omega$ N $\in I N O C$ ) and on the reverse a revival of the Kore (?) type with a legend announcing three neokorate temples. Hermophilos is named as archon (no. 195.1): ЄПI ЄРМОФI $О О V ~ A P A[X]-~$ CAP $\triangle I A N I \Omega N$ TP[IC N $\in \Omega K O P]$. A variation of this combination is known, in Paris (FG1284), but only noting two neokorates. The issue in Sardis must have come from the mint in $221 / 2$, and is the basis for Burrell's argument for the date of the award of the neokorate.

After Elagabalus was assassinated, the awarding of a third neokorate temple-warden was withdrawn. But when it was withdrawn is a matter of conjecture. Burrell suggested "a period of indecision" on the part of the city, which was indicated by an inscription at Sardis. ${ }^{257}$ This inscription, on a statue base of the agoranomos C. Asinius Neikomachos Frugianus, is much restored. However, the composer of the inscription only felt comfortable calling the city "many times neokoros." ${ }^{258}$ According to Burrell, either the Sardians were squeamish about admitting the loss of a neokorate cult or "the correct title was still in adjudication." She preferred the latter, due to the coins that appeared from the mint with the bust of Severus Alexander and the legend of "two neokorate temple-wardens," with Asinius named as archon. ${ }^{259}$ Heller saw this as a "passive resistance" to Roman power, a "temporary subterfuge to gloss over" the problem on the part of the local aristocracy. ${ }^{260}$

Coins of Julia Maesa consist of only two types, a bust of Julia combined with either Mên or Demeter, and the legend CAP $\triangle \operatorname{IAN} \Omega \mathrm{N} \Gamma \mathrm{N} \in \Omega \mathrm{KOP} \Omega \mathrm{N}$ or CAPDIAN $\Omega \mathrm{N}$ TPIC $\mathrm{N} \in \Omega K O P \Omega \mathrm{~N}$ (M7 GR 307; no.

[^29]257 Burrell 2004, p. 111.
258 Burrell 2004, p. 111, inscrip. 7.
259 Burrell 2004, p. 112, esp. coin type 8.
260 Heller 2006, p. 279, my translation.
196.1). The coins are conventionally dated to 218-222, but a coin from the Sardis excavations must show that the time of minting extended after Elagabalus's death. It has the normal obverse of Julia Maesa, with the reverse of Mên, but the reverse legend reads CAP $\triangle \mathrm{IAN} \Omega \mathrm{N} \cdot \mathrm{B} \mathrm{NE} \Omega \mathrm{KOP} \Omega$, in ex N , with the B clearly recut. ${ }^{261}$

The recutting shows two things: the neokorate status was important to the city, and the mint officials wanted to make the city's titles as precise as possible. But it also shows that the minting of Maesa's coins in Sardis must have extended into the reign of Severus Alexander. This is our earliest evidence of the withdrawal of the third neokorate status. Interestingly, this reuse of the die appears to have been short-lived, resulting in only a small issue; thus, the minting of coins for Julia Maesa did not extend significantly into the reign of Severus Alexander. Coins of the emperor do not show a change from third to second neokorate. The decision to revoke the third neokorate temple must have happened very quickly after the death of Elagabalus, and Sardis may not even have waited for official word from Rome about the revocation. We may then argue either that the composer of the statue base for Neikomachos Frugianus was caught in an extremely brief moment after Elagabalus's death or before the third neokorate temple was officially granted for Elagabalus. Or the stonecutter was not as sensitive to the number of awards of neokorates as we would wish him to be, just as the minters sometimes showed hesitations in announcing neokorate temples (although, admittedly, this is more of a first- or second-century phenomenon and is not the strongest possibility). In any case, the new coin shows how quickly the matter was resolved on the local level; the announcement of the third neokorate temple disappeared from Sardis's titles, at least until the middle of the third century, when coins of Valerian I again display the legend "tris neokoros."

Although the antoninianus (or radiate) was introduced by Caracalla, few of these coins appear in excavations, including at Sardis. It is not until Balbinus and Pupienus revived the coin and discontinued the denarius that antoniniani begin to appear regularly in any excavation; the higher rate of loss probably

261 See Evans 2015.
supports the idea that the coin was no longer a double denarius, but had dropped to a $1.5: 1$ exchange rate. ${ }^{262}$ The decline in weight and fineness of the coins are in inverse proportion to numbers of antoniniani found on sites, especially after 253. Coins of Gallienus and Claudius II Gothicus with a "distinctive, 'local' style" and SPQR in the exergue come from an uncertain mint in Asia (no. 264.1; cf. 284.1), though probably not Antioch. ${ }^{263}$
"Barbarous radiates" are known from all over the Mediterranean and occur in some number in Sardis as well. ${ }^{264}$ They can be difficult to distinguish from badly-made official issues (which is why Buttrey did not distinguish the coins). ${ }^{265}$ I tried to list those with nonsense inscriptions as barbarous radiates, but I will admit to there being great overlap between those coins given to official mints (nos. 296-303). Scholars agree that the barbarous radiates, probably minted in the West, filled the need for local bronze coins, which had not been struck since the middle of the century. ${ }^{266}$ In Sardis, the barbarous radiates are represented by the flaming altar reverse, as well as standing goddesses and an eagle. Most hover at weights just above a gram, but can fall as low as half a gram. These coins are found especially in later contexts at Sardis (in hoards H1 and H7, both closed by 518, see Section 3.8; fifth century: 297.9, 300.1, 325.1; sixth century: 297.8).

The Average Annual Coin Loss/ 1000 for cities with a normal profile (Fig. 2.2) shows a rise in the Severan period compared to the Antonine in all cities except Butrint. From the Severan period, the AACL/1000 reaches its highest point in all normal cities and Priene, with large peaks; Caesarea Maritima shows a steady climb instead of a peak. After ca. 284, the cities show a drop in the numbers, but the totals are still generally above those of the Severan age. Clearly the centralization of mint production allowed more coins, not fewer, to reach the cities.

[^30]
### 2.5 The Fourth Century

Almost every area of excavation in Sardis has Late Roman material, including areas of commercial and domestic use, and all the major buildings have Late Roman strata. Indeed, almost any square in Sardis would yield Late Roman remains, from the villas that appear alongside the Pactolus, to cemeteries that line the roads into Sardis. ${ }^{267}$ The city appears to have been a bustling, densely-populated metropolis in this era. ${ }^{268}$ Diocletian elevated the city to capital of the province; this change in status must have been reflected in outside money coming into the city. In Late Antiquity, the bishop of Sardis was an important member of the church hierarchy, ${ }^{269}$ lending credence to the importance of the city. Widespread travel by pilgrims and church officials attending synods had a positive effect on the economies of the cities, as traveling bishops and their staffs spent money on food and lodging; secular leaders held assize meetings which also attracted foreigners to the city with the same needs. ${ }^{270}$ Sardis was largely spared the damaging upheavals of accusations of heresy in the Christian church and efforts to root it out. At various times in the century Sardis was used as a military base; ${ }^{271}$ Valens is recorded to have stayed in the city in $365 .{ }^{272}$ In short, the fourth century was a time of prosperity, when public and private buildings were built, refurbished, or restored. ${ }^{273}$

The Bath-Gymnasium was still in use, and indeed, a fountain was relocated to function inside the frigidarium in the late third or early fourth century. ${ }^{274}$ Seager suggested a mid-fourth century date for the conversion of a large room in the

[^31]Complex into a synagogue. ${ }^{275}$ The extensive city walls may date to the same period; in the mid- to late fourth century, tombs were constructed outside of this new urban boundary. ${ }^{276}$ Bath CG appears to have been renovated, although by the following century it was probably abandoned because it was too far from the city center. ${ }^{277}$ A monumental inscription naming Arcadius was attached to a still-unidentified structure. ${ }^{278}$ Buildings and tombs were built around the Temple of Artemis, although the rapid excavation of this area in 1910-1914 and loss of most excavation records allows us to say little more. ${ }^{279}$ More tombs are found along the Pactolus, and a large house (the "House of Bronzes") was erected across the road from the Bath-Gymnasium. The exception to this building and restoration was the Temple of Artemis; it appears that by the mid-fourth century, alluvial deposits covered the western end of the Temple. The sacred site shifted to the southeast corner of the Temple, as the small Church $M$ was built on top of the alluvial deposits. ${ }^{280}$ By the late fourth or early fifth century, the two columns in antis of the ancient temple were removed in a major reorganization of the eastern end, though the purpose of this reorganization is still unclear. ${ }^{281}$ Buchwald proposed that Church EA was built around the mid-fourth century alongside the banks of the Pactolus, though this could not have been the major church of Sardis, given the importance of the bishopric. ${ }^{282}$

[^32]276 Hanfmann and Waldbaum 1975, pp. 35-52; Yegül 1987, p. 52; Rautman 2011, pp. 10-11.
277 Hanfmann and Waldbaum 1975, pp. 129-68; Rautman 2011, p. 11.

278 Rautman 2011, p. 13.
279 See Hanfmann and Waldbaum 1975, pp. 53-73.
280 Hanfmann and Waldbaum 1975, pp. 74-87; Hanfmann 1983, p. 195; Cahill and Greenewalt 2016, pp. 504-7.

281 Cahill and Greenewalt 2016, pp. 483-87.
282 Buchwald 2015, p. 9; cf. Foss 1976, pp. 34, 43-44; Scott 1987, p. 76 .

### 2.5.1 Recalls, Primary Deposits, or Residuals? Fourth-Century Coins in Archaeological Contexts

All over the Mediterranean, Late Roman sites are characterized by the number of fourth-century copper-alloy coins, which seem to be strewn with abandon under floors, in drains, and in dumps; they were trodden underfoot, lost, or discarded throughout the century, but especially in the second half of the century. And the number of coins reported from sites continues to mount, even as numismatists struggle to identify the worn, clipped, badly-made, and badlypreserved coins from archaeological sites, leading to very high numbers of "illegible fourth- or fifthcentury coins" in excavation reports.

There is no need here to list the many reforms of the coinages in the fourth century, as the coins in general become smaller and lose any silver once found in the alloy. In 318, the coins contained about $5 \%$ silver and weighed about 3 g ; by the reign of Valentinian I, there was no silver in the alloy and the same denomination weighed about $2.5 \mathrm{~g} .{ }^{283}$ The alloy varied tremendously by mint and through time. ${ }^{284}$ Even before the end of the century, very little tin was added to the copper; it was steadily replaced by lead. ${ }^{285}$ Nevertheless, at each stage of the reduction of silver and size of the coins, numismatists have to decide if the government recalled the old coins while issuing new small change, or if they let the coins return to the mint by less-controlled means, in order to reuse the raw material to make new coins. Archaeologists need to be aware of the problem, for any recall would have an impact on the interpretation of the coins found in the strata, especially in the placing of a terminus post quem. ${ }^{286}$

The argument for recall rests on the assumption that the mint would recall earlier coins in order to extract what silver content was still available from the coin, and reissue the coins on the new, smaller, and less-fine standard. In general, the idea that when the mint issued new coins (usually, but not always, indicated by new types) on a smaller and less-fine module, the mint called in the old coins by making

283 Moorhead 2012, p. 614.
284 Moorhead 2012, pp. 614-15.
285 Kent 1994, pp. 20-22; Moorhead 2012, p. 615.
286 cf. Evans 2013b.
the old coins illegal. ${ }^{287}$ Milne first promulgated this argument in 1914. ${ }^{288}$ There are some numismatists who contend that the recalls were in force across the Mediterranean. ${ }^{289}$ Thus, the argument concludes, fourth-century coins were no longer available for use by the mid-fifth century and should not be found in fifth-century deposits. Numismatists use as their primary evidence a provision gathered in the Codex Theodosianus (9.23.2) that speaks about Imperial recalls: "We command that only the centenionalis nummus shall be handled in public use, and that the coining of the maior pecunia shall be abolished. No person, therefore, shall dare to exchange the decargyrus nummus for another coin, and he shall know that the aforesaid money, which can be seized if found in public use, will be vindicated to the fisc." ${ }^{290}$

Among the problems of this provision are the date of this decree and the nature of the named coins. ${ }^{291}$ For instance, Richard Abdy limited the recall to coins of Magnentius and Decentius, western usurpers. ${ }^{292}$ Harl preferred to see the western emperor Honorius outlawing the use of "nummi other than two fractional pieces, a tiny coin on the AE4 module . . . and its possible double struck on an AE3 flan." ${ }^{293}$ Roland Delmaire limited the recall to Gaul; J.P.C. Kent, more

287 See Harl 1996, p. 172; cf. Callu 1980, pp. 96, 103.
288 Milne 1914, pp. 26-27.
289 See Callu 1980, pp. 99-103; Harl 1996, pp. 167, 169-70; Heinrichs (2007, pp. 87-89) suggested that the coins could still have been used very locally, but even intercity use of the coins would prove to undermine the mint system, and so could not be tolerated.

290 Trans. Pharr 1952, with original names for coins inserted. Harl (1996, p. 170) also suggested that CTh 9.23.1 was promulgated by Constantius II to outlaw the use of the maiorinae, centenionalis, old nummi, imitations, counterfeits, and coins of Magnentius. Other numismatists agree with Pharr, who translates the passage to comment only on the ban on melting coin to resell the metal or moving the coins to an area of scarcity (Delmaire 2003); I also agree that this law does not apply to recalls. The statute reads: "Quicumque vel conflare pecunias vel ad diversa vendendi causa transferre detegitur, sacrilegii sententiam subeat. . . ." Pharr translated as, "If any person should be detected in melting down money or in transporting it to different regions for the purpose of selling, he shall undergo the sentence for sacrilege. . . "
291 See coin names in Melville-Jones 1990; Moorhead 2012, p. 616.

292 Abdy 2012, p. 596.
293 Harl 1996, p. 178.
generally the West. ${ }^{294}$ Kent noted that the reform of 354 "left most of the older coinage still in circulation; we cannot be sure whether an original intention to demonetize was rescinded (or proved impossible to enforce), or whether the older coins were simply to be discounted or refused in official payments." ${ }^{295}$ Given the law found in CTh 9.23.2, he argued that at the end of the fourth century the "eastern government may have prohibited the continued circulation of the AE2 (the decargyrus nummus), but it merely replaced one AE3 by another, and probably allowed its AE4 ... to survive." Thus, the larger Salus Reipublicae AE4 coins circulated alongside the Concordia Aug/cross AE4 coins, without being recalled. ${ }^{296}$

A secondary decree, also found in the Codex Theodosianus, is even more problematic. In 371, Valens and Valentinian I decreed that the aes dichoneutum (literally, "twice-smelted") was to be delivered to the Imperial largesses (or not be delivered; the language is unclear), but it was to be withdrawn from use (CTh 11.21.1). ${ }^{297}$ Harl defined the aes dichoneutum as a billon coin; Michael Hendy further defined the aes as the large coins of Julian II, Jovian, Valentinian I, and Valens, though he admitted that few of these were in circulation when the law was promulgated. ${ }^{298}$ Given the uncertain nature of the coin that was or was not to be delivered, this is a very shaky base on which to make an argument for a widespread recall of coins.

Some numismatists prefer to use the term "demonetization," or a lack of official recognition of the coin. ${ }^{299}$ The coin would not be allowed to be returned to the government for official payments, but could still be used for any other transaction. However, it is highly uncertain if copper-alloy coins were ever used for official transactions such as the

294 Delmaire 2003; Kent 1994, p. 18.
295 Kent 1994, p. 18.
296 Kent 1994, p. 19.
297 Impp. Valentinianus et Valens aa. Modesto praefecto praetorio. Aes, quod dichoneutum vocatur, non modo deinceps largitionibus inferatur, verum de usu penitus et conversatione tollatur ac nemini publice hoc habere liceat. Et conflatores figurati aeris, adulteratores etiam monetae capitalis animadversio persequatur.

298 Harl 1996, p. 172; Hendy 1985, p. 473.
299 Burnett (1987, p. 137) suggests "perhaps removed," then p. 138 "demonetized"; Butcher 2001/2, p. 82; Guest 2012, p. 107.
payment of taxes; nor is it certain that they were provided as pay to soldiers, leading one to ask what the demonetization would have looked like. Arguing in favor of demonetization, Burnett noted that coin hoards have few coins minted between 300 and $350 .{ }^{300}$ He further suggested that the removal of the coins by the mint served to shore up confidence in the new smaller and less-fine issues being produced. ${ }^{301}$

But fourth-century coins do still appear in fifthcentury coin hoards and excavation strata in the East (see Sections 3.5, 3.6), causing Butcher to suggest that "obsolete coins may have remained in use . . . circulating unofficially within the private pay community." ${ }^{302}$ Peter Guest noted that the "evidence for systematic recall . . . is patchy and in principle, therefore, bronze coinage could remain in use for many years." He referred especially to the coins of Valentinian I and Theodosius I, which circulated through the sixth century, citing the work of Butcher in the publication of the excavations of the Beirut souk. ${ }^{303}$

The unease Butcher and Guest felt with the recalling of coin may have rested on the expense the mint would incur in recalling, re-melting, and restriking the coins-especially for the copper-alloy coins, which already circulated as a token coinage. Moreover, as more archaeological excavations publish their coins, the more it is clear that large numbers of fourth-century coins survived to be used in the late fourth and even the fifth century, at least in the eastern provinces. Yet, how do we know that the coins have survived to be used as coins (that is, are indigenous artifacts), and are not residual or infiltrated (cf. p. 50)? As suggested in Section 3.5, the few fourth-century contexts that we can isolate using the pottery show that there are a number of fourth-century contexts that are significantly earlier than the closing date given by the pottery. The Mean Coin Date calculations suggest this is normal for deposits. ${ }^{304}$ The same information comes

300 Burnett 1987, p. 116.
301 Burnett 1987, pp. 131-32.
302 Butcher 2001/2, p. 82. Earlier, in finding a second-century coin in a fifth-century deposit, he noted that if the coin was still being used in the fifth century, "we should have to radically rethink our ideas about Roman monetary policies in the third, fourth, and fifth centuries" (Butcher 1995, p. 306).
303 Guest 2012, pp. 107, 110; cf. Butcher, 2001/2, pp. 97-114.
304 See below for the calculation of the Mean Coin Date, App. 4.
from hoards. There are no fourth-century hoards yet known from Sardis, and precious few from the Roman East. However, the hoard from Aphrodisias which closed at the end of the fourth century did contain coins from the early part of the century, which should suggest that fourth-century coins were used throughout the century. ${ }^{305}$ One hoard from Sagalassus which contained only coins of the second half of the fourth century was found associated with pottery from the end of the fifth century. ${ }^{306}$

Fourth-century coins are found as important components of fifth-century strata in Sardis (see Section 3.5). About one-third of these are coins more than 16 mm in diameter, ranging up to 29 mm . Numismatists have amassed more examples fourthcentury coins as integral parts of archaeological strata, such as at Jalame and Sepphoris. ${ }^{307}$ The survival of fourth-century coins in excavation strata and hoards can show that there were no effective Imperial recalls of fourth-century coins in the East, and the archaeologist must carefully weigh the evidence of both the pottery and the coins before setting a chronological terminus post quem for the stratum.

### 2.5.2 AACL/1000 for Fourth- and Fifth-Century Coins at Sardis

The graph for the Average Annual Coin Loss/1000 shows less regularity among the sites than in previous periods (Figs. 2.3, 2.4). All of the comparison sites show a large rise in the number of coins dating from 324 to 364, from the previous Tetrarchic period. In the second half of the fourth century, a normal profile cannot be established, as four of the normal cities show a rise in the number of coins (with Sardis having the highest AACL/1000 of all), and four show declines.

305 The hoard also contained a second-century BC coin and antoniniani; see discussion of hoard composition in Section 3.8; cf. Lauritsen 1984. The hoard from the "synagogue" in Caesarea Maritima was closed, according to Raphael and Bijovsky, in 361, although there are 11 coins from later time periods (up to 408421). They suggested that these coins are intrusive, but the tailing off of the graph, rather than an abrupt end in 355-361, seems more in keeping with hoard behavior. This hoard also contained issues from the early fourth century (Raphael and Bijovsky 2014).
306 Stroobants and Poblome 2015, pp. 81-82, where they also noted a second hoard with only fourth-century coins in it, in an archaeological context that is dated to later than the closing of the hoard.

307 Bijovsky 2012, pp. 52-53, 83; Weiss 2005; cf. Reece 2003, p. 160.

The same split appears in the first half of the fifth century: Sardis, like Ephesus, Priene, Caesarea Maritima, and Athens, show declines in the AACL/ 1000 . Yet the decline is not necessarily linked to the lack of trade at these important commercial (and, for the most part, coastal) cities, as the AACL/ 1000 showed a slight rise in Corinth, Kenchreai, Constantinople, and Pergamum. By the second half of the fifth century, most of the cities show a decline, save Athens, Constantinople, and Caesarea Maritima. ${ }^{308}$ The decline in the period of 450-498 is surely in part due to the number of "unidentified fifth-century" coins reported in large numbers in every modern excavation report, and is probably only an apparent decline, due to the difficulties of identifying these ill-made coins.

### 2.6 The Fifth Century and Coin Circulation

The composition of the circulation pool of fifthcentury copper-alloy coins has become a matter of controversy due to Ze'ev Safrai's contention that the low number of these coins found on sites in Palestine pointed to a significantly stagnant economy in the fifth century. ${ }^{309}$ Guest also found that the fifth century was a conspicuous trough between the fourth- and sixth-century peaks, even after he had adjusted for coins using the AACL/1000 equation, in the cities of Athens, Corinth, Nemea, Beirut, Caesarea Maritima, Jerusalem, and Sardis. ${ }^{310}$ The scarcity of fifth-century coins was "conspicuous," beginning with the reign of Arcadius and reaching its nadir in the reign of Zeno. ${ }^{311}$ Yet Guest is at pains to note that we "conflate coin production and coin use," when all the list of excavation coins tells us is when the coin was made, not when it was deposited. ${ }^{312}$

[^33]311 Guest 2012, p. 112; cf. Arslan 2003, p. 39.
312 Guest 2012, p. 117.

As pointed out by several scholars, most notably Gabriela Bijovsky, Safrai's thesis is in need of major modification, at least in terms of defining the fifthcentury circulation pool. ${ }^{313}$ Safrai did not take into account the numerous "illegibles" reported by every excavation, nor the problem of finding small fifth-century coins if sieving is not used. The lack of excavation coins may be due simply to the consequence of the size of the late fifth-century coin, the heavily-leaded alloy, and the shoddy production values, allowing many to escape the mint with types not struck or off center. The result is that many fifthcentury coins are under-reported. In Sardis, Buttrey recorded 1716 illegible fifth-century coins (along with 1881 fourth- or fifth-century coins) and about 1450 legible fifth-century coins. ${ }^{314}$ The current excavations have 1875 illegible fifth-century coins, compared to 1387 legible coins of the same century. I do not include in the totals the coins that disintegrated in cleaning, although more coins of the fifth century tend to disappear this way than coins of other centuries. Bijovsky has previously noted the problems of under-identification of fifth-century coins due to disintegration of the flan, as have other numismatists in their excavation reports. ${ }^{315}$ The percentage of illegibles at Sardis is quite normal; Reece reported even more dismal statistics from Carthage, where of 3638 coins, 2796 disintegrated upon cleaning, leaving 397 illegible coins and only 413 which could be identified. ${ }^{316}$

As noted by Bijovsky, there does seem to have been an imperative need for small change that the government did not fully supply. In the fifth century, users started to press into service any small metal pieces, including coins from the Ostrogothic or Vandalic mints, blank flans (possibly mis-strikes, but possibly manufactured as such), snips from sheet metal, cast lead slugs, copies of various qualities, fourth-century coins, or, north of Palestine, clipped

[^34]315 See Bijovsky 2012, p. 153-56, citing earlier work; Moorhead 2007, p. 288.

316 Reece 1984a, p. 171.
older coins and even coins dating to the Hellenistic and Imperial periods. ${ }^{317}$ Adelson and Kustas suggested that the clipping of AE3s to the size of AE4s must have been official policy since "considerable amounts of AE3 [coins were] still in circulation."318 The larger coins were thus "made to conform to their monetary system," in a sense becoming "retariffed" larger coins. ${ }^{319}$ Cast copies are only recently being understood as a part of the circulation pool; these are best identified by the casting tangs which are still attached, which seem to be found mostly in the East. ${ }^{320}$

Part of the reason why so many older coins and other forms of coin were pressed into service was that the mint produced only a few AE2 issues (and rarer AE3 coins), leaving the tiny AE4 coins as the predominant product from the mint. ${ }^{321}$ After 450, none of the larger bronzes is found at Sardis. It appears that the mint struck fewer coins than were needed on a local level, leaving the user to make up the difference-and this state of affairs lasted (at least) into the sixth century for the smallest denominations. ${ }^{322}$

Almost half of the fourth-century coins from the strataat the Triconch Palace in Butrint were "apparently lost in the fifth century," and a few of the second half of the century survived in the sixth-century levels. ${ }^{323}$ Butcher recorded a number of fourth-century coins found in the fifth-century levels in the excavations of the souk in Beirut. ${ }^{324} \mathrm{He}$ had earlier published the finds from Nicopolis ad Istrum and had found that coins up to 200 years old were found in fifth-century deposits (that is, they are not residual coins). ${ }^{325}$ Robert Knapp and John MacIsaac also reported a number of fourth-century coins from fifth-century strata. ${ }^{326}$

[^35]Fourth-century coins were used in the fifth and into the sixth century in Carthage, until Vandalic coins finally supplied the populace with small change. ${ }^{327}$ And now the deposits from Sardis can be added to the evidence. While third-century coins are a small portion of fifth-century deposits, fourth-century coins, and especially coins from the second half of the fourth century, are common in the same deposits. As Moorhead pointed out, "What is interesting is that it has taken archaeologists and site numismatists a long time to prove what hoard evidence had already told us"-that fourth-century coins were a vital part of the fifth-century monetized economy. ${ }^{328}$

Although the volume of the production of copperalloy coins (and thus annual losses) may have been low, the remains show that Sardis was prosperous in the fifth century. Church EA was extended, and this may be the date of the villa built to the north of the church; Church M was inserted into the Sanctuary of Artemis around 400. Buildings and vaulted tombs surrounded the Temple of Artemis, which was no longer in use by the early fifth century. Housing was found in sector PC, along the banks of the Pactolus River. Simple houses flanking a five-meter-wide road have been excavated in the ByzFort sector; houses with light industrial installations may also date to the fifth century in MD2 and MD1/S. In Field 55 and MMS, fine residences filled the areas to either side of the streets; the House of Bronzes also had a fifth-century phase. The BathGymnasium Complex was refurbished. The Byzantine Shops, which fronted along the Marble Road and backed into the Bath-Gymnasium Complex, were probably built around 400; the Synagogue was flourishing in the fifth century. The Marble Road was renovated in a major euergistic undertaking around 400, making the street about 20 meters wide and flanked by porticoes, with a piazza near the Shops. The Byzantine Shops speak eloquently of a thriving craft economy, while the houses and tombs show that mosaicists and painters would have found ready employment on the site; marble and pottery were still imported. ${ }^{329}$

[^36]328 Moorhead 2007, p. 294.
329 Foss 1976, pp. 41, 43-46; Hanfmann 1983, p. 195; Scott 1987, pp. 76-77; Yegül 1987, p. 51; Buchwald 2015, and see now especially Rautman 2011.

The nummi of Anastasius I appear far less often than Andrei Gândilă, in his study of excavation coins in the eastern provinces, expected to find, especially in western Anatolia, and particularly in Sardis. He thus posited the continuing use of the nummi of the fifth century in the following century, which is very likely. ${ }^{330}$ Yet he was also unaware of Burrell's publication of the MMS/S hoard of nummi, which helps to fill the gap of the fifth-century corpus of coins excavated at Sardis. ${ }^{331}$ Sardis, at least, did have access to the nummi of Anastasius I (see no. 1004, with 200 examples).

As noted (Figs. 2.3, 2.4), the AACL/1000 for the cities declines in the fifth century, sometimes dramatically. ${ }^{332}$ Moorhead noted that mint supply for various sites differ-Butrint (and to a lesser extent, Corinth) obtained more coins from western mints than did Sardis—but coins did travel from western mints to Sardis, and eastern mints were represented in the west. The result is "a coherent economy in the mid- and eastern Mediterranean." 333

### 2.7 The Byzantine Period: The Sixth through Thirteenth Centuries <br> 2.7.1 The Sixth Century

The history of the sixth century in the East is punctuated by an earthquake in 528/9 (if we trust Malalas 18.35), ${ }^{334}$ a famine brought on by an environmental catastrophe around 536,335 and waves of a plague that began in 541/2. ${ }^{336}$ Wars with Persia and a period of cold, dry winters may have contributed to losses in agricultural production and population. As a result, urban centers contracted, and spoliation of earlier monuments became the norm

[^37]as buildings were repurposed. ${ }^{337}$ The century was a transformative one across the Mediterranean, which Cécile Morrisson and Jean-Pierre Sodini labeled as an "urban withdrawal." ${ }^{338}$

The reassessment of the sixth century in Asia is reflected in studies about Sardis in this period. Building projects, imported pottery, and silver tableware led Mark Whittow to suggest that the sixth century was a period of prosperity. ${ }^{339}$ Clive Foss was convinced that the urban core of Sardis was still economically sound in the sixth century. ${ }^{340}$ The area around the Bath-Gymnasium Complex was still in use, and the large House of Bronzes was refurbished. The houses of MMS also show continued remodeling. Rautman's recent assessment of Late Antique Sardis upholds Foss's view. ${ }^{341}$

Jane Scott was more pessimistic, citing the change of the Bath-Gymnasium into a souk, piles of refuse in the colonnaded street in MMS, and the insertion of wells, suggesting the aqueduct was no longer functioning. ${ }^{342}$ Morrisson and Sodini see Scott's assessment of Sardis as indicative of a larger trend, saying that after a bout of Justinianic building in the East, we see "the progressive degradation of the cities." Streets were overbuilt "shoddy and partitioned structures"; "baths and buildings of importance did service as habitations or workshops." Refuse piled up in public places, spolia were used for fills or left in heaps in the city, sewers and aqueducts were abandoned, city walls and houses left unrepaired, and burials were allowed inside city walls. ${ }^{343}$

Bronze coinage took on a new importance, if we are to understand that some troops began to be paid partly in bronze coins; additionally, they may

[^38]have entered the marketplace as charagma, or change when the taxes were remitted in gold coin. ${ }^{344}$ Yet by the sixth century, there is some evidence that earlier coins were being recycled for use, ${ }^{345}$ even if the ancient texts and excavation finds suggest that there was a high level of monetization. ${ }^{346}$ Scholars have suggested that the reformed coins of the Byzantine emperors reestablished the presence of small change for the markets on sites, ${ }^{347}$ but it appears in the Roman East that the reformed coins did not drive out the Late Roman nummi. Certainly the hoard evidence, as Moorhead noted, points to the presence of fourthcentury coins into the sixth century, ${ }^{348}$ as do some deposits in Sardis.

The level of monetization is not seen in the number of sixth-century coins at Sardis, but in the continued use of fifth- and even fourth-century coins; while the fifth century had seen the use of coins one hundred years old, the following century continued the use of the same coins, now up to two hundred years old. In this way, the sixth century looks very different from the fourth and fifth centuries, in terms of the types of coins that make up the deposit, for more cities than just Sardis. All of the cities with normal profiles show a decline in the first quarter of the sixth century, except Caesarea Maritima (Fig. 2.4). ${ }^{349}$ By the second quarter of the sixth century, all the cities except Caesarea Maritima and Corinth show a (slight) rebounding of the AACL/1000. This recovery continues through the last quarter of the sixth century, except at Ephesus and Kenchreai. The overall lack of sixth-century coins in Sardis may reflect the lack of coin supply; this lack, and not a weakening economy, is why sixth-century deposits consist mostly of fourth- and fifth-century coins.

The lack of sixth-century coins is surprising in light of the fact that all of the mints except Heraclea were reopened in the sixth century, although coins from mints other than Constantinople are rare at

[^39]345 Morrisson and Sodini 2002, pp. 217-18.
346 Laiou and Morrisson 2007, p. 37.
347 Gândilă 2009, pp. 156-57.
348 Moorhead 2007, pp. 294-95.
349 Evans 2007, pp. 46-47; Sanders 2002, p. 648, at least until the middle of the century.

Table 2.2 Byzantine mint production and representation of the mints at Sardis, fifth through seventh centuries.
(Note: Cherson is not listed, as production was small and sporadic; no coins from Cherson were found in the excavations; nor were any from the temporary mints of Alexandretta, Seleucia, nor Constantina in Cyprus.) The symbol " $/$ " shows that the mint was open; " X " that the mint was open and coins from the mint were found in the excavations. Not all mints produced all denominations when the mint was open.

| Issuer | Constantinople | Thessalonica | Nicomedia | Cyzicus | Antioch | Alexandria |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Anastasius I | X | 1 | X |  | X (M7 B 45) |  |
| Justin I | X | / | X (M1 72ff, M7 B 53) | 1 | X | 1 |
| Justinian I | X | X | X | X | X | 1 |
| Justin II | X | X | X | X | X | 1 |
| Tiberius II | X | X | X | / | X |  |
| Maurice | X | X | X | X | X | 1 |
| Phocas | X | X | X | X | 1 | 1 |
| Revolt of the Heraclii |  |  |  |  |  |  |
| Heraclius | X (sole mint after ca. 630) | $\begin{array}{\|l\|} \hline \text { X } \\ \text { (M1 950-951) } \end{array}$ | X (interrupted 617/8625/6, then closed 627) | X (interrupted 614/5-625/6) | / (closed 610) | 1 |

Sardis until the reign of Justinian I. ${ }^{350}$ During the reign of Justin I at Sardis, most coins come from the mint at Constantinople; these are mostly pentanummia, with a portion coming from the mint at Nicomedia. Gândilă suggested that "local patterns of circulation" were the rule in Anatolia, so the picture may be different in other cities. ${ }^{351}$

In the eastern provinces, the number of coins that came from the mint early in the reign of Justinian Iup to 538-seems to drop, but the numbers recover after this date. ${ }^{352}$ The picture is not as clear at Sardis, where about $25 \%$ of the coins from Justinian's reign come from the period 527-538, a somewhat smaller percentage than one would arrive at if one simply divided his reign into sections of equal length. Nummi were still minted during his reign, but this was the last wave of this type of coin that came from eastern mints. Gândilă's study tracked the growing importance of the pentanummia at Sardis, along with other sites in Anatolia and the Balkans, after the reform of $512 .{ }^{353}$ Indeed, increasing numbers of these coins are found in the current excavations as well as in Bates 1971: about one-third of the coins from the reign of Justinian are pentanummia, in contrast to the much lower number

[^40]of nummi (see nos. 1020, 1025, 1054, 1055). There is an increase in coins from the mint at Antioch as well, especially as this mint is not well represented in Sardis in any other period; the mint was increasingly important across Anatolia and the Balkans. ${ }^{354}$ After the monetary reform in 550 , the number of coins coming from the mints appears to continue to drop, except for decannumia, which pour from the mints at Constantinople, Nicomedia, and Cyzicus, possibly due to the great need for small coin after a period almost exclusively devoted to the production offolles. ${ }^{355}$ For the period after 550 in Justinian's reign, Bates, Buttrey, and I recorded only ten folles (most from Constantinople) and nine half-folles, but 52 decannumia. Of the latter, $38 \%$ of these came from the mint at Constantinople; $17 \%$ from the mint at Nicomedia (two of which Bates classified as "barbarous"); and only $12 \%$ from the mint of Cyzicus. The folles, though the numbers are small, should reflect the increasing proportion of coin from the mints at Antioch, Nicomedia, and Cyzicus, especially in land-locked cities, ${ }^{356}$ as happens minimally in Sardis. Yet the situation is reversed for the halffolles, where Constantinople is minimally represented (1), and Antioch and Thessalonica provide the coins for the site (each 4).

[^41]The excavation coins are almost exclusively of the lighter standard for Justin II, and Vandalic and Ostrogothic nummi, as well as crude copies from an uncertain mint, supplemented smaller coins. Although the Vandalic and Ostrogothic nummi are not calculated in the AACL/1000, ${ }^{357}$ Justin II's reign shows a peak for the average loss for any of the reigns of the Byzantine emperors in most of the cities. It has been suggested that the coinage flowing from the mints under Justin II reflects his "prodigal policy of expenditure," combined with the needs arising from epidemics and earthquakes. ${ }^{358}$ Certainly, the coins in the Sardis excavations from Justin's reign far outnumber the longer-lived Justinian I: 278 are recorded from the period 565-578. Of these, almost half come from the mint at Constantinople; not quite $20 \%$ of the coins from the mint are half-folles, while slightly over half are pentanummia, a trait of several cities in Anatolia (Fig. 2.19). ${ }^{359}$ The second-largest mint supplier to Sardis is Nicomedia, but only $10 \%$ of the coins represented in the sample are pentanummia. Pentanummia make up about $50 \%$ of the coins from the mint at Cyzicus. Only the half-folles from the mint at Thessalonica are represented, but the number of coins from this mint is a pattern seemingly unique to Sardis and coastal towns in western Anatolia. ${ }^{360}$

The varying weight standards of coins of Tiberius II and Justin II may have led to a revaluing of the coins in terms of the solidus; certainly, by the time of Phocas, the smallest denominations were rarely minted or stopped being minted. ${ }^{361}$ Yet it does not appear that recalls were ever attempted, or if they were, they were very unenergetic or confined to cities with mints. Coins of Anastasius I are found in hoards that closed in the reign of Heraclius; ${ }^{362}$ types of Heraclius are overstruck on coins of Justin I (e.g., M1 958). The coins of Tiberius II are not especially prominent on

357 They were not included since the dates of their minting stretch out over two or more Byzantine emperors. There were few of them, and they would have only minimally impacted the totals.
358 Gândilă 2009, p. 178.
359 Gândilă 2009, p. 179.
360 Gândilă 2009, pp. 178-79, although the percentage is somewhat less than the coins reported by Bates 1971.
361 Grierson and May 1992, pp. 56-69; cf. Sarris 2011, p. 239.
362 Gândilă 2009, pp. 162, 172.
the site, nor are they common in Anatolia, except for the coastal town of Side, in part due to lack of output from the mints. Only five pentanummia and nine decanunmmia are present, in contrast to larger numbers of these coins from Anatolian sites. ${ }^{363}$

The mint totals decline again under Maurice, as does the AACL/1000; this is the first period that the practice of overstriking coins becomes prominent. ${ }^{364}$ Yet of 183 coins featuring Maurice on the obverse, only three of them were overstruck; this number must be balanced with the knowledge that coins of Maurice disappeared under the types of Phocas and Heraclius, including coins that show evidence of having been twice overstruck.

By the 590s, the mints turned to reusing old flans for the coins, and overstruck coins become common. ${ }^{365}$ Sometimes this is accompanied by trimming the older flans. During the reign of Heraclius, restriking revalued the coins (e.g., from a half-follis to a follis, no. 1208.1). This phenomenon is common across the eastern Mediterranean and should not be considered a damnatio memoriae, but a problem in the supply of copper for making new flans. ${ }^{366}$ A few coins are pierced, which would mean that they were withdrawn from circulation (nos. 1048.1; 1182.1; M1 682, 1146, 1160); one of these is a huge follis of Justinian I, but it does not come from an excavated context, so we cannot tell when the user decided it was worth more as an amulet than a coin. Gândilă noted that pierced Justinianic heavy folles are not unusual in the Balkans and Anatolia, and he suggested that archaeological contexts show that the piercing occurred soon after the series was "withdrawn from circulation," as a reminder of the glory of this prosperous period. ${ }^{367}$

[^42]
### 2.7.2 The Seventh Century

A reassessment of what happened to the eastern cities in the seventh century is ongoing, and the coin evidence from Sardis will have much to contribute. Some scholars argue that the century was one of economic and political collapse, where cities dissolved into much smaller towns oriented towards the agricultural fields surrounding them. The Persian or Arab invasions caused this collapse, with the resulting loss of a city-based market economy and of a monetized urban center. The century, then, was characterized by depopulation, a loss of land under cultivation, and a period of economic contraction that is partly demonstrated by the lack of coin in circulation. ${ }^{368}$ Only ports, with access to cheaper transportation costs, had access to quantities of imported goods. The reduced economic resources contributed to the depopulation. Along with instability within the government (until Heraclius consolidated his power) and fighting on the eastern and southern borders came divisions within the Church. ${ }^{369}$ All must have contributed to an economic downturn in the Byzantine Empire.

However, other scholars think this emphasis is misplaced: cities do shrink, but they survived as urban centers and retained their role as the center of a market economy, production of goods, and administration. These scholars argue that the city no longer looks like an imperial Roman city, but beginning in the sixth century, the city changed into something else-and would have done so, even without Arab or Persian invasions. ${ }^{370}$

Thus, some cities, such as Amorium or Euchaita, were preserved, although they do not look like the fourth- or fifth-century phase of the city. Earthquakes may have damaged Ephesus, Aphrodisias, Hieropolis, and Sardis; Laodicea may simply have been abandoned by the early seventh century; Anemurium continued to function until about 660. ${ }^{371}$ Angeliki

368 The debate about the economic conditions of the seventh century is long; to begin, see Harvey 1989, pp. 20-22, Harl 1996.
369 Whittow 1996, pp. 90-91; Haldon 1997, pp. 11-12.
370 Whittow 1996, pp. 94-95; 2003, pp. 407-16; Haldon 1997, pp. 93-95, 108; Brandes 1999; Zavagno 2009.
371 Williams 1977, p. 175; Trombley 1986; Cormack 1990; Haldon 1997, pp. 95, 103, 108; Morrisson and Sodini 2002, pp. 190-91; Morrisson 2002, p. 956; Schindel 2009, pp. 199-213; Arthur 2012, p. 279.

Laiou and Morrisson argued that the direct linkage between urban decay and Persian incursions is misplaced, especially as most of the evidence comes from Sardis, where some of the decline appears to pre-date 616. They suggested the decay comes from the loss of urban population, the decline in urban markets, and the decrease in long-distance trade, which is especially seen in the reduction of African Red Slip pottery found on sites. ${ }^{372}$ Yet, overall, after mid-century, the material evidence suggests that the economy of Anatolia had stalled badly, leaving little trace of new building projects or imported goods. The once-heavily monetized economy may have been replaced with many transactions undertaken by barter or payment in kind.

The seventh century sees a dramatic change in the supply of coin, with the closing of several mints (Table 2.2 ); by ca. 630, only the mint of Constantinople produced coin on a permanent basis. ${ }^{373}$ Smaller denominations were rarely minted even in Constantinople after this period, and so the coins of earlier reigns may have been pressed into service for a long time. ${ }^{374}$ In the eastern Mediterranean, sites record a lack of seventhcentury coins (Fig. 2.4). ${ }^{375}$

Foss argued that all urban culture came to a crashing end in Sardis in 616, when Persians may have invaded. ${ }^{376}$ No ancient sources mention this incursion, and there is no evidence that the Persians stayed to rebuild. Yet Foss suggested that there was widespread destruction in the city based on burned levels in the Bath-Gymnasium Complex and the House of Bronzes and abandonment of many other sectors of the city. ${ }^{377}$ He noted that "great numbers" of early coins "found in and below the level of destruction" dated between 498 and 616, none of them of a type issued later than $616 .{ }^{378}$

[^43]The excavator of the Byzantine Shops agreed with an early seventh-century destruction, but was unsure of the cause. ${ }^{379}$ No material remains were found for the seventh or eighth centuries in sector PN, and a hoard that was stashed in the Temple of Artemis closed in the early seventh century. ${ }^{380}$ In Field 55, a large building was destroyed and not rebuilt. ${ }^{381}$ This is probably when the Temple of Artemis and the Bath-Gymnasium Complex were damaged. Rautman noted that public spaces were abandoned or at least "poorly maintained" in this century; houses were subdivided or transformed for non-domestic uses; and imported pottery is lacking. Yet some areas of the city (such as the Bath-Gymnasium Complex) do have material evidence pointing to continued habitation. ${ }^{382}$ Certainly, the urban fabric of Sardis changed in the seventh century.

Gândilă argued that, with Phocas, we return to a high level of AACL/1000, mostly due to the folles that came from Constantinople. The rise in the AACL/1000 is also seen in Athens, Corinth, and Anatolian centers. ${ }^{383}$ Coins from the period are suppressed in Butrint. ${ }^{384}$ Gândilă noted that Antioch became an important supplier of coin to Anatoliaexcept for Sardis, where coins from Thessalonica (to which I now add Cyzicus) replaced the Antiochene coins from other sites. ${ }^{385}$ He could not account for this substitution. Sardis is different as well in not being supplied with many coins of the smallest denominations, unlike other Anatolian cities. ${ }^{386}$ I have found some half-folles, but only one pentanummium.

Under Heraclius, many coins were overstruck on earlier issues, as is normal in the East. Thus, Heraclius's AACL/1000 is kept somewhat artificially high, even as it marks a permanent downward trend in the graph. Gândilă noted that $20-40 \%$ of the early

## 379 Crawford 1990, p. 2, esp. n. 11.

380 Bell 1916, pp. viii-ix; Foss 1976, pp. 53-54; Hanfmann 1983, p. 162; Scott 1987, pp. 79-80.

381 Evans in Berlin and Kosmin, forthcoming; see Cahill 2015, p. 156.

382 Rautman 2011, pp. 24-26.
383 Gândilă 2009, p. 187.
384 Moorhead 2007, p. 299.
385 Gândilă 2009, p. 185.
386 Gândilă 2009, p. 187.

Byzantine finds at Sardis could be attributed to the reign of Heraclius: while the higher percentage is much too high, the coins of Heraclius do form a significant percentage of coins on the site of the period from 500-620. ${ }^{387}$

In the earlier excavations, coins of Constans II were found mainly in the Bath-Gymnasium Complex and the Acropolis. ${ }^{388}$ Since Foss wrote, excavators have only retrieved unstratified coins of Constans II from MMS and ByzFort. Morrisson suggested that these coins "must be related to military expenditure and the cantonment of troops. ${ }^{3389}$ Foss associated the same coins with the road-builders who were housed in the Bath-Gymnasium Complex, since they were found in rooms that housed a large lime kiln. ${ }^{390}$

### 2.7.3 Late Seventh and Eighth Centuries

The absence of late seventh- and eighth-century coins is not just apparent in Sardis; Pergamum also reports a lack of coins in the eighth century and into the ninth. ${ }^{391}$ The site of Side shows much the same pattern as Sardis, as very few of the excavation coins date from the sixth to the first half of the seventh; coins of Constans II appear as a slight blip, after which there are few coins until the tenth century. Ephesus shows the same abrupt decline, which led Foss to conclude that urban life ended here as well as in Sardis. ${ }^{392}$ Hendy was unsure why the numbers of coins dropped in the excavations of the Kalenderhane Camii in Istanbul, but from Constantine IV to Theophilus, the number of coins per reign are usually two or three. ${ }^{333}$ Few coins are found in excavations, hoards, as isolated finds, or in museum collections, so we cannot attribute the lack of coin to a withdrawal of earlier coin, Theophilus's monetary reforms, nor a "damnatio memoriae of iconoclastic coins." ${ }^{394}$

387 Gândilă 2009, p. 189.
388 Foss 1975, p. 17.
389 Morrisson 2002, p. 956.
390 Foss 1975, pp. 21-22; 1976, p. 57; Foss and Scott 2002, pp. 617-18; Greenewalt, Johnston, and Buttrey 1973, p. 28.
391 Voegtli et al. 1993, pp. 9-10; cf. Foss 1975, p. 20.
392 Foss 1979, p. 103.
393 Hendy 2007, p. 175.
394 Morrisson 2002, p. 956; cf. Laiou and Morrisson 2007, pp. 86-89.

Lightfoot noted that the dearth of coins might in part be due to the lack of interest in Byzantine layers in excavations in Turkey, and the interest and availability for excavation for sites that were (largely) abandoned after ca. 650: Aezani, Ankara, Antalya, Izmir, Kayseri, Konya, Pessinus, and Sagalassus. ${ }^{395}$ Or, the lack of coin can be due to a "reasonably active, even if very highly localized and at times and in places a very low level, market economy."396 Haldon conceded that coins may not have played much of a role in the economy, as taxes may have been paid in kind or credited to one's account. Certainly, small change was no longer minted in any volume after 658, in part due to the closure of mints in this century, such as Antioch. ${ }^{397}$ Yet the economy was still monetized, as can be seen by hoards, which often contain coins 50 years old or older at the time of deposition, ${ }^{398}$ and by the sites of Athens, Magnesia ad Maeandrum, and Priene. ${ }^{399}$

Coins of the third quarter of the seventh and all of the eighth century are largely missing from Sardis. By the eighth century, the urban center consisted of houses on the Acropolis, a wall built of spolia from the ancient city along the edges of the Acropolis, and a road in the area of the Byzantine Shops. ${ }^{400}$ Most of the late seventh- and eighth-century coins came to the current excavations from the fields outside of the excavation trenches, as unstratified finds. The coins that were excavated come from MMS, Road Trench, ByzFort, and areas in the former Bath-Gymnasium Complex (BS, BE, BSH). The latter are interpreted as belonging to the troops quartered here and the construction crews working on a cobbled road, only one section of which has been found. ${ }^{401}$ There are also two interesting fals coins that were probably minted in cities under Muslim control, mimicking Byzantine types (nos. 1235.1, 1236.1).

395 Lightfoot 2002, pp. 230-33; 2007; cf. Whittow 1996, p. 94.
396 Haldon 2012, p. 100; cf. Lightfoot 2002, p. 235; Laiou and Morrisson 2007, pp. 41, 87.
397 Haldon 2012, pp. 108-9.
398 Haldon 2012, pp. 111-12.
399 Morrisson 2002, p. 957.
400 Foss 1976, pp. 56-58; Scott 1987, pp. 80-81; Foss and Scott 2002, pp. 617-18; Rautman 2011, p. 26.
401 Foss 1976, p. 57; Hanfmann 1983, p. 161; Foss and Scott 2002, p. 618.

### 2.7.4 The Ninth through Thirteenth Centuries

Few excavations across Asia Minor have attested ninth-century levels. While there is some evidence of recovery at Ephesus, overall, Sardis and Anatolia in general lagged far behind the cities in the Balkans. ${ }^{402}$ The coin evidence remains sparse for this century in Sardis; remains of habitation do as well, with some settlements of people living around the partially-dismantled Temple of Artemis and around Church EA. ${ }^{403}$ Foss described the city as a "typical medieval town with a fortress on the Acropolis" that participated in a revival of "trade and urban life." ${ }^{404}$ The coins that were excavated come from MMS, but nothing is known about occupation levels during this period in this part of the city.

Numismatically, we know very little about the tenth and eleventh centuries at Sardis. Excavated coins come from sectors MMS and PN, but almost all of these coins were turned in to the excavation by local farmers, suggesting a scattering of residential sites around the area of old Sardis. These centuries are depressingly familiar to us-a litany of raids and physical remnants of ill-made walls-until 1098, when John Doukas captured the city, with a resulting 200 years of peace, ${ }^{405}$ although Laiou and Morrisson saw an overall recovery in the East in the tenth century. ${ }^{406}$ The eleventh century saw the introduction of billon aspron trachy. However, to save on labor, the size of the engraved dies shrank, and the thin coins end up with a cup shape (the incorrectly labeled "scyphate"). These must have circulated alongside the reducedweight folles. Laiou and Morrisson suggested that the trachea outnumber folles on excavation sites, but this is not the case at Sardis. ${ }^{407}$

Coins of the twelfth century are only known to us from non-excavated finds; they consist of billon scyphate trachea, minted in Constantinople and Nicosia. The lack of twelfth-century coins is comparable to the

[^44]excavations at Pergamum. ${ }^{408}$ Yet the century was a period of some prosperity and an increase in population in the East, at least until a "major fiscal crisis" late in the century ${ }^{409}$ If this holds true in Sardis, then the urban agglomeration has not been discovered.

Buchwald has proposed that Church E belongs to the Lascarid period, probably in the second quarter of the thirteenth century, when "Sardis enjoy[ed] the safety and prosperity that make the construction of a new and well-built church likely." ${ }^{" 10} \mathrm{He}$ pointed out that the emperor John III Doukas Vatatzes lived in the area and paid for other churches nearby. This period of relative peace closed when the Turkish forces controlled the city at the very end of the century. Minting, even in Constantinople, was done only when individuals turned in metal to be made into coin, so

[^45]coin circulation became regional. ${ }^{411}$ The excavation coins from Sardis are mostly billon scyphate trachea, but one is a scyphate follis and one a copper tetarteron. Latin imitations are also present; most come from the mint at Constantinople, but the tetarteron was minted in Magnesia ad Sipylum. The coin of Manuel Doukas was the last coin of the Roman rulers found in the modern excavations. Between 1204 and 1453, Sardis was like the other cities in Asia Minor, in depending on a mixture of "national," feudal, and colonial coinages-from Latin imitations to Venetian and Ottoman issues. ${ }^{412}$ Overall, the monetization of the city was at a low ebb, a situation not rectified until the modern period.

411 Harvey 1989, p. 88; Laiou and Morrisson 2007, pp. 221-22.
412 Morrisson 2002, p. 961; Laiou and Morrisson 2007, p. 216;
cf. Foss and Scott 2002, p. 621.

## Chapter Three

## Archaeological Contexts of Note

Situating excavation coins within the archaeological context of a site has only recently become a problem mulled by archaeologists and numismatists. Previous numismatic studies, especially of excavations in the eastern half of the Mediterranean, have tended to be composed of lists of the coins found on the site. Even the previous report of the excavation coins at Sardis contained only a few pages on specific contexts, and these pages were penned by George Hanfmann and Barbara Burrell—significantly, two archaeologists. ${ }^{1}$ The numismatists noted that their interests "differed" from the archaeologists-who only needed a concrete date-but they did stress the need for archaeologists to use the coins as a terminus post quem, and the numismatists' desire to have undated coins dated by the archaeological context. ${ }^{2}$

As I have spent as many years digging as working with coins, I was able to bring archaeological and

1 Buttrey et al. 1981, pp. xx-xxiv. This pattern of moving from a list of coins to a short description of archaeological context is followed in Corinth (Edwards 1933 to MacIsaac 1987), has not yet been accomplished for Antioch (Cox 1950, with studies on the way by Alan Stahl), Pergamum (Regling 1913; Boehringer 1984); or Ephesus (Karweise 1986), among many others. For discussions on the importance of archaeological contexts and coins, see, e.g., Ellis 2017 and Evans 2013a.

2 Buttrey et al. 1981, p. xvii. See also Butcher 2016, p. 225: "However, since we know very little about the longevity of coins in circulation, their utility in [dating contexts] is rather more restricted than non-specialists might imagine."
numismatic interests together. Hence, this chapter will discuss important contexts where coins can illuminate the history of the context, or the context can help illuminate the history of the coin. In some cases, I returned to some important contexts not fully explored in the previous report.

When publishing excavation coins, the numismatist has several factors to consider about the reasons why the coins are found within archaeological contexts. The size and material of the coin, the effort shown in antiquity to recover the dropped coin, the environment around the deposited coin, the modern methods of retrieval, and the conservation of the coin are all factors that contribute to the coins that are presented in the numismatic catalogue. ${ }^{3}$ As the numismatist assesses these factors, she must work with the archaeologist to clarify the context (construction fill, a votive deposit, erosional wash, a hoard?). Close collaboration with the pottery specialists is most helpful. ${ }^{4}$

The first thing the numismatist must try to understand is whether the coins are coming from a primary or secondary (even tertiary) deposit. For urban sites, the common consensus is that once the people in the city became familiar with using coins, they dropped them in places where exchanges of goods or services and coins took place, thus allowing

[^46]the archaeologist to find them many years later. In Pergamum, for example, the excavators did not find many Roman Provincial or Roman Imperial issues, except in their excavations of the Via Tecta sector, where they comprised about half of the excavated coins. It was suggested that the ill and pilgrims were responsible for these losses, as they would have used the route on the way to the Asklepion. ${ }^{5}$ While Steven Ellis pointed out that the rate of this type of abandonment cannot be very high (at least until the Late Roman period) unless we are willing to see intentional placement of coins as a major contributor to the coin record, unintentional loss must still be the primary way that coins become "systemic," that is, no longer part of the economy, but part of the history of the strata found on the site. ${ }^{6}$

Primary deposits can tell us a great deal about the stratum: its function and a terminus post quem of when it was laid down are key. I explore the primary deposits in hoards, ${ }^{7}$ including votive deposits. Due to the fact that Sardis remained intensely inhabited through the Late Roman period, intact Hellenistic and Roman deposits are few. Nor are there many destruction deposits, even though we know that Sardis endured at least one devastating earthquake. Since buildings were torn down, refurbished, and reinhabited, very few intact deposits were left in the city for archaeologists to study.

Secondary or tertiary contexts are much more common. The construction fills which were used to rebuild the city in the first century after the earthquake are secondary deposits of coins, along with such fills as that under the Roman road and portico mosaics in MMS, and under the mosaic in Rooms B and C in PN, and any deposit upon which a Hellenistic, Roman, or Byzantine structure is found. The deposits in MMS show a mixture of coins from the Hellenistic or Early Imperial

## 5 Voegtli et al. 1993, p. 7.

6 Ellis 2017, pp. 307-8; my thanks to Steven Ellis, who provided me with his paper while it was still in press. I also thank Phil Stinson for worrying with me about archaeological contexts as he prepared to publish his work at Aphrodisias.

7 A hoard is defined as two or more coins deliberately brought together by a user and then lost. Hoards can consist of votive deposits, purses (usually called circulation hoards), or savings hoards. In contrast, according to Grierson 1975, p. 124, there are cumulative finds, those "brought together by circumstance," such as water flowing through a drain or coins found in a dump.
period with fourth- and fifth-century coins, likely a moving of a fill (possibly for the second or third time) to another spot as houses were built and refurbished.

The result is that the coin can be classified as indigenous or non-indigenous. ${ }^{8}$ Indigenous coins are those that are in use at the time when the deposit is formed. These are the coins that were in circulation when the user dropped or placed them in the stratum. Non-indigenous coins are of two types: residual and infiltrated. Residual coins are those which have been worked into a higher level from the stratigraphicallyolder deposits. Usually these residuals can be identified as being part of a secondary deposit-a trench for a water pipe, a pit, a rodent burrow, or any other modification of the original deposit. The field excavator identifies secondary deposits; coins from these deposits are scrutinized to determine whether they "fit" the chronological profile of the rest of the coins and the pottery in the deposit. Residual coins are not uncommon in urban settings, where repairs and refurbishments of buildings, water pipes, and roads are common.

Infiltrated coins are those that were minted after the deposit was laid down, but which have worked their way into the deposit, normally from above. Infiltrated coins are much more difficult to detect than residual coins, as the secondary nature of the deposit was not recorded (or obvious), yet the chronology of the coin does not "fit" with the pottery or the other coins in the stratum. The problem of labeling a coin "infiltrated" is acute, as we would very much like to know how long a coin remains in circulation; without knowing if it is infiltrated, we might suspect that the coin remained in circulation longer than it did. When an Early Imperial coin is worn to the point of being smooth, we can understand a long circulation period. When the coin is a fourth-century coin found in a stratum with fifth-century coins, then the decision to name it as an infiltrated coin and differentiate it from a circulating coin becomes difficult. At Sardis, this process has been eased in the recent excavations by the use of Lots (cf. p. 1), which helps me to make a determination if the coin is indigenous or non-indigenous.

Thus, the context of the coin is crucial. If the room has a floor that is easily swept, it is unlikely to

[^47]have "caught" many coins. However, the refuse from cleaning such floors may contain coins. Coins that were abandoned escaped notice by being dumped in the refuse, perhaps to be used in a tertiary deposit as a construction fill. Ellis notes the disturbing jibe against a nouveau riche man in Petronius' Satyricon 43, who "was always ready to pick a quadrans out of the dirt with his teeth"; clearly, coins were carried out with the trash. ${ }^{9}$ Dirt floors might have captured coins more easily, since they may have been covered with mats, reeds or other organic materials, or the coins may have been pressed into the dirt. It can be difficult to separate coins that have landed on the dirt floor and those that are part of a fill used to rebuild the floor after long use. Coins from latrines or drains are also susceptible to being washed into a tertiary deposit, especially if they are small and light Late Roman issues. Similarly, the seasonal washes (especially in the Wadi B area) may have taken coins far from their secondary deposit; conversely, simply having a downward slope on a site may not have very much impact on small objects like coins. ${ }^{10}$

Why base-metal coins are found almost exclusively in non-votive strata is a question that needs to be answered. These may be accidental losses, or "deliberate discarding of unwanted or valueless coin." ${ }^{11}$ The distinction between deliberate discarding and accidental loss may be impossible when the excavation is of a shop, market area, or a dump. ${ }^{12}$ The copper-alloy coins may have been determined to be no longer useful and thus deliberately discarded, or of so little value that the ancient user did not find it worth his time to retrieve a coin that fell into the dirt, no matter what the context. ${ }^{13}$

One "truism" among non-archaeologists is that coins "percolate" up through layers, smudging our ideas of what was in circulation at the same time, or the date of the layer. ${ }^{14}$ The agency involved in this movement is not named. Archaeologists who have

[^48]tested the "trample" theory (the movement of coins within the stratum as the layer is used for walking) noted that coins might possibly move laterally, but half never moved, and none penetrated a cobbled surface. If there was any movement, it was subsidence, perhaps due to earthworm movement. ${ }^{15}$ However, the archaeologist does need to be aware of other postdepositional forces, such as small animal burrowing or activity, tree roots disturbing the features, or later human agricultural activity. ${ }^{16}$

Other factors govern the body of excavated coins. Silver and gold coins are rarely lost; numismatists commonly cite the parable of the woman sweeping her house until she finds the silver coin she had lost to explain why we do not find precious-metal coins (Luke 15: 8-10). Although it is true that copper-alloy coins could mean a great deal to a person who could not afford to have silver coins in his or her possession (as seen in the parable of the "widow's mite" in Luke 21: $1-4$ ), the fact that the coins may have been the same color as the earth on which they were dropped, coupled with their low(er) value, means that almost all of the coins found on a site that do not come from hoards are copper-alloy coins.

The methods of excavation will have an impact on the coins reported from that excavation, as can be seen especially in older excavations, ${ }^{17}$ but the numismatist cannot wait for field methods to become consistent before publishing the excavation coins. One means of analysis that is used sporadically in the west, but rarely, if ever, in the east, is to estimate the volume of the earth from which the coins came. Some methods have a greater impact on the recovery of the coin, such as sieving. It is only when sieving is used that archaeologists can be reasonably certain of retaining the smallest coins, especially those of the fifth century.

The size of the coin becomes crucial in the Byzantine period, as folles are routinely at least 25 mm and over 10 g in weight, at least until the early seventh century. We would expect, then, that the ancient user abandoned folles less routinely; inversely, the modern user may recover them more routinely.

[^49]Grierson suggested that we should discard arguments about the circulation pool based on the presence of folles, as only the smaller denominations could more truly reflect the pool; he based his arguments on data from Athens, Corinth, Antioch, Constantinople, and Sardis. ${ }^{18}$ Gândilă observed that up to $80 \%$ of the Byzantine coins found in Balkan, Anatolian, and Near Eastern sites are either folles or half-folles. He noted that the sites reporting such high numbers of large coins also report the recovery of small fifthcentury nummi, which means they are coming from excavations that practice similar (and thorough) recovery methods. ${ }^{19}$ In Sardis, the half-folles and folles from the excavations are about $48 \%$ of the finds from the period 491-640. ${ }^{20}$ Clearly, substantial numbers of small coins of the Byzantine period are being recovered in the Sardis excavations.

Legibility also has an impact on the interpretation of the body of excavated coins. For Hellenistic and Imperial coins, legibility is hampered by the length of time the coin was in use before being deposited. Numismatists are very familiar with Early Imperial coin flans worn to smoothed surfaces. Sometimes the alloy used by the mint, as is especially seen in Late Roman copper-alloy coins, exacerbates the problem. The percentage of illegible coins varies widely between sites and within a site: in Sardis, current conservation standards mean about $30 \%$ of Hellenistic coins are illegible (beyond knowing they are Hellenistic), and $45 \%$ of all the coins are illegible beyond mean groupings, e.g., first-second century or fourth-fifth century. I could not place a minute number of coins even in these broad categories. This compares to the $5 \%$ unidentifiable from the Pergamum excavations, ${ }^{21}$ the $26 \%$ illegible coins from Sagalassus (where 56\% are Late Roman), ${ }^{22}$ and the $69 \%$ illegible rate reported for Butrint, where the huge majority of coins found dated to the Late Roman period. ${ }^{23}$ When MacDonald

[^50]reported on the Hellenistic to Diocletianic coins at Aphrodisias, he said $12 \%$ of the coins were illegible; he thought that most of the illegibles were of the Early Imperial period since they were the most worn. ${ }^{24}$ Coins of the fifth century are often illegible due to poor strikes and high lead content; the latter leads to a higher rate of corrosion. Illegibility continues to hamper the interpretation of excavation coins into the Byzantine period. Christopher Lightfoot noted 25\% of the total number of coins found in the excavations of Amorium are unidentified, beyond a general "Byzantine" category. These unidentified coins may be hiding a quantity of the poorly-manufactured coins made from the reigns of Heraclius to Theophilus. They thus have an impact on how we understand urbanization and the Arab conquests of the seventh century. ${ }^{25}$

One factor that certainly has an impact on the number of reported fifth-century coins is the number of illegible coins and coins that disintegrated during cleaning. Often these types of coins, along with unstratified coins, are removed from the site totals, although numismatists will now add "uncertain first to third" or "uncertain fourth or fifth century" categories. ${ }^{26}$ For example, Hans Voegtli simply recorded 1065 "stratified" and 169 unexcavated coins from Pergamum; these are broken into very broad categories (antike, byzantinische, etc.), although Morrisson was more precise for Byzantine coins, listing all of them in an appendix. ${ }^{27}$ The numismatists for Butrint did not appear to list unstratified coins, but did not clarify their methodology. ${ }^{28}$

Disintegrated or illegible coins, or sometimes even copies or imitations, are often elided in catalogues of excavation coins, especially in older publications, when they are ignored by the site numismatist. The differing standards in publication from the early twentieth century to the early twenty-first century can be quite stark, and we must use earlier information with

[^51]caution. Morrisson pointed this out for the excavation coins of Pergamum, where there were great disparities between the number of Byzantine coins reported in the 1904-1908 excavations and the more modern material. ${ }^{29}$ The number (if any) lost in cleaning is not stated. ${ }^{30}$ The early reports of the excavation coins at Corinth are a mirror of Pergamum. Katharine Edwards, who had a staggering total of over 15,000 coins from five years of excavations, did not record the illegibles or disintegrated coins, beyond "unstamped or illegible" coins. ${ }^{31}$ When Joan Fisher reported a year's worth of excavation coins from Corinth, she noted 12 illegibles that were not included in the totals, 112 illegible fragments, and 44 disintegrated coins. ${ }^{32}$ The problem of disintegrated coins is not mentioned in the earlier publication of the excavated coins at Sardis, although 1847 coins are listed as such in the coin record in the period covered by that catalogue. Since 1973, only 86 coins have disintegrated. It is perhaps because of the high percentage of disintegrated coins-very likely many were Late Roman nummi-that the Sardis excavations were cited as being unexpectedly light in fifth-century coins in previous publications. It is not because, as Grierson suggested, that the coins were "simply ignored" in the excavation. ${ }^{33}$

Grierson pointed out that chance or "stray finds are our best guide to the [broad] area over which the coins were used." ${ }^{34}$ Other numismatists agree that chance finds are better representations of use at a site than hoards. ${ }^{35}$ Excavation coins, on the other hand, are the "best guide to changes in the character and density of circulation from one period to another." ${ }^{36}$ Indeed, there are coins that are only known from nonexcavated contexts at Sardis, including all coins of the twelfth century. Our record of the numismatic history would be hindered if these coins were not taken into account (yet see Grierson's warning on putting too

Voegtli et al. 1993, p. 10.
Voegtli et al. 1993, p. 5.
Edwards 1937, p. 255, cf. p. 249.
Fisher 1984, p. 250.
Grierson 1965, p. xi.
Grierson 1965, p. ii.
Wigg-Wolf 2009, p. 114.
Grierson 1965, p. iii.
much reliance on these coins). ${ }^{37}$ Wigg-Wolf argued that even a small sample could give a useful overview of the site, as long as fieldwalking or surveying are combined with other means of collecting the coins. ${ }^{38}$

As can be seen from the data from Sardis (Fig. 3.1), where most of the unstratified coins are turned in to the excavation by local landholders or excavators on walks, Wigg-Wolf's theory does show correspondence between the two methods of retrieving coins. The dip in the number of unexcavated Late Roman coins can be a measure of the difficulty of seeing smaller coins; and the corresponding slight rise in the unexcavated Byzantine coins can be due to the larger size of the flans. There are two caveats to relying too much on this data. Finer chronological divisions would make the correspondence less clear, and so Grierson's suggestion that excavated coins tell us more about the "character and density of circulation" is true in the smaller divisions of time. Secondly, the Hellenistic period and the first/second century are oddly suppressed in the excavated coins; this may be due to modern land use around the ancient city, where the larger coins are picked up as more interesting. It may also be due to the excavation efforts in areas of the city that were mostly rebuilt in the Late Roman period. In other words, the research projects do have an impact on site totals.

The rest of this chapter explores various contexts in the ancient city. The reader will note that only some of the problems deal with chronology of the coins, which can be the overriding interest that the archaeologist has in dealing with the coins. Nevertheless, the coins tell us much more about how they were used in the daily life of the inhabitants, in the city where western coinage was born.

### 3.1 Lydian Contexts

Due to the difficulty of locating and excavating deeplyburied Lydian levels, only a few Lydian coins have been found in the excavations since 1972. Nicholas Cahill and John Kroll have thoroughly published one important deposit, which has helped us to understand the chronology of the later Lydian coins. ${ }^{39}$ A second context reveals little about chronology but opens

37 Grierson 1965, pp. vi, xiii.
38 Wigg-Wolf 2009, p. 122.
39 Cahill and Kroll 2005.
up important issues concerning the metallurgical composition of the electrum coins and gives us insight into the use of the coins. ${ }^{40}$

Although two electrum trites (nos. $\mathbf{1 . 1}$ and 1.2) and a silver stater (no. 3.1) were found in an archaeological context, it was a robbed-out structure on Sardis' Acropolis; only the shadow of a rectangular foundation remained. The pit contained roof tiles, architectural terracottas, and pottery, along with the coins. The deposit contained pottery from the seventh to the mid-fifth century BC. Because of graffiti on two of the sherds, Cahill suggested that the structure was possibly a small sanctuary to Artemis, and the coins were originally a votive deposit, lost when the sanctuary was demolished and thus ending up in a secondary deposit. ${ }^{41}$ He noted the parallel to the pot hoard found beneath the Temple to Artemis in Ephesus; the Gordion hoard, found in 1963, ${ }^{42}$ was also associated with a building on the Citadel of that city. However, both hoards only contained electrum coins, unlike the mixture of electrum and silver found in the Sardis deposit.

Three (possibly four) coins were excavated in and under the debris of the monumental mudbrick city wall, which was partly demolished after the Persian sack of the city ca. 547 BC . Two coins were found beneath a surface in the recess of the wall. One was a gold $1 / 12$ th stater of the heavy standard (no. 2.1), and one was a silver $1 / 12$ th stater (no. 4.1). Since both were sealed by the destruction debris, these coins date no later than Croesus' reign. ${ }^{43}$ A silver $1 / 24$ th was discovered near the head of a soldier whose body had been thrown off the wall and covered by wall debris (no. 5.1). ${ }^{44}$ These three coins confirm the scholars who argue for the high chronology of the heavy croeseids. ${ }^{45}$

[^52]Scholars agree that the silver fractions continued to be minted through the reign of Cyrus, with the style becoming "rude and clumsy." ${ }^{36}$ A coin found in a later wall (no. 5.2) has a style that is not noticeably different from the coin found in the Persian destruction levels, so I have grouped it within the earlier time frame. It is assumed that Sardis was the primary mint for the coins. ${ }^{47}$

A silver stater (no. 3.1) was found mixed with both Early and Late Lydian pottery, in a context that included pottery from the early sixth (?) to the second quarter of the fifth century BC. This is the same context as the two electrum coins. ${ }^{48}$ Silver staters are known from a relatively large number of obverse dies, showing a heavy production of these coins. ${ }^{49}$ A heavy hemihekaton found in the excavations of PN (M7 GR 133) attests to the long use of these coins, as it was associated with an Athenian black glaze sherd made between 470 and $450 \mathrm{BC} .{ }^{50}$

Coin no. 6.1, minted in Miletus, is one of the many coins that were produced in this mint in the late sixth to early fifth century BC, that is, until the destruction of the city. ${ }^{51}$ Their ubiquity means that they even appear to have been inserted into Samos's electrum hoards. ${ }^{52}$ As the coin was turned into the excavation team, Cahill suggests that the context of the coin at Sardis is uncertain; hence it was given a NoEx designation.

### 3.2 Late Fourth-/Early Thirdto Second-Century BC Deposits <br> 3.2.1 PN Destruction Deposit

In 1965, part of a house was excavated in sector PN, the east side of the Pactolus River, a mixed industrial sector outside of the walls of the Lydian city; the later Hellenistic city was mostly found in areas to the east of PN. Although Johnston catalogued the coins of this

[^53]Table 3.1 Coins in the PN Domestic Unit XIX and XX Hoard.

| Inventory No./ M7 No. | Johnston Identification on Envelope; in M7 | Evans Identification | Date | Mint | Diam. | Wt. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| C65.0145/ $\text { GR } 399$ | "Small denomination of Alexander III?" [and successors]; Hellenistic illegible | Tyche/bee? | 305-288 BC? | Ephesus? | 12 | 1.12 |
| C65.0147/GR 81 | Tyche/bee | Now too corroded for identification | 305-288 BC | Ephesus | 10 | 1.04 |
| C65.0148/ <br> GR 399 | Pergamtm? Seletrid? Alex III etc? ; Hellenistic illegible | Herakles/horse and rider | Late $4^{\text {th }}-$ early $3^{\text {rd }}$ century BC | Macedon in M7, now given to Sardis? | 19 | 6.00 |
| C65.0611/GR 17 | Herakles/club, bow in case, unit | Now too corroded for identification | Late $4^{\text {th }}$-early $3^{\text {rd }}$ century BC | Macedon in M7, now given to Sardis? | 20 | 4.87 |
| C65.0613/GR 18 | Herakles/club, bow in case, fraction | Now too corroded for identification | Late $4^{\text {th }}$-early $3^{\text {rd }}$ century BC | Macedon in M7, now given to Sardis? | 10 | 1.06 |
| C65.0616/GR 81 | Tyche/bee | Tyche/bee | 305-288 BC | Ephesus | 10 | 1.25 |
| C65.0617/GR 81 | Tyche/bee | Tyche/bee | 305-288 BC | Ephesus | 10 | 0.92 |
| C65.0618/GR 81 | Tyche/bee | Now too corroded for identification | 305-288 BC | Ephesus | 10 | 1.15 |
| C65.0619/ <br> GR 399? | Illegible | Possibly Tyche/bee | Possibly 305-288 BC | Possibly Ephesus | 12 | 1.36 |

excavation, she did not fully explore the archaeological context. I re-examined the coins at the request of Andrea Berlin, who has published her reevaluation of the pottery in the deposit. ${ }^{53}$

The excavated portions of the house are called Domestic Units XIX, XX, and XXIX. The excavators noted that the pottery that was resting on the floors of XIX and XX was sealed by the collapse of a roof and the subsequent fall of roof tiles, mudbrick, and stones, which Hanfmann interpreted as the debris of the destruction of the city after Achaeus's revolt in 215-213 BC. Included in this deposit were nine bronze coins, probably from a small purse inside the house. ${ }^{54}$ Rotroff and Oliver noted that the debris was "tentatively associated with the attack of Antiochus III on the basis of coins." ${ }^{55}$ Berlin's re-examination of the pottery suggested a destruction date of the late fourth to early third century BC. ${ }^{56} \mathrm{My}$ re-examination

## 53 Berlin 2016.

54 Hanfmann noted "coins of Antiochus II" below the floor on which the debris rested, with coins in the destruction debris of Antiochus III or Antiochus IV (Johnston later identified the coins as one of Antiochus III and one of Antiochus Hierax). The coins of Ephesus were mentioned in context with the whole smashed pots on the floor (1965, p. 4 and Hanfmann et al. 1966, pp. 24-25). The coins of Ephesus were not mentioned when he later discussed the deposit (Hanfmann 1983, p. 110).
55 Rotroff and Oliver, 2003, p. 11.
56 Berlin 2016, p. 353.
of the coins confirmed that date, and suggested an important consideration for the date of the Herakles/ Apollo Sardis civic coins.

Johnston carefully studied the nine coins, as could be seen by the revisions to the field readings that she wrote on the coin envelopes. While she ultimately classified three of the nine as "illegible Hellenistic," two were labeled "Alexander III [or successors]," and four as "Ephesos ca. 305-288 BC" (see Table 3.1). ${ }^{57}$ Johnston argued that "dating by Seleucid coins [found above the destruction debris] confirms the correlation with the siege and punishment of Sardis in 213 BC . ${ }^{558}$

It can now be seen that the latest date of a coin in the small deposit is $305-288 \mathrm{BC}$, and all the coins agree with this late fourth to early third century BC date. The coins in Units XX and XIX thus close about two generations shy of Antiochus' siege. It could be that the destruction was a local incident, common

[^54]58 Buttrey et al. 1981, p. xxi.
in houses with open fires; it cannot be due to the destruction after Antiochus III retook the city.

The third unit, XXIX, presented a less clear archaeological picture. The excavators recognized the floor level due to a burnt layer and sherds, although no restorable vessels were found. This floor was not sealed by a fallen roof, as was the deposit in XIX and XX, and it was further complicated by later building phases, especially a Roman mausoleum. Nevertheless, the deposit was also considered evidence of Antiochus' sack of the city. ${ }^{59}$ Four coins were found in this deposit, or in association with it; one is a third-century AD coin of Maximian Herculius (C67.0031), clearly showing the contamination from later building in the area.

The three other coins were Hellenistic: C67.0039 was a nicely preserved Herakles/club and bow in case familiar from Units XIX and XX. The photograph and coin envelope identification of the second coin (C67.0032) identify it as a coin of Seleucus I (probably 282-281 BC). The third coin, labeled "Antiochus II or III" by Hanfmann, was given by Johnston (following Newell WSM) to Antiochus Hierax, coming from the Sardis mint and minted between 241 and 228 BC (C67.0034). The coin is now assigned to Antiochus III, from the mint at Sardis, dating to ca. $197 \mathrm{BC} .{ }^{60}$ The die axis does conform to Houghton and Lorber's series. If the date of the last coin stands, the deposit is disassociated from the siege of Antiochus, which may already be arguable due to the lack of whole vessels on the floor or recovered in the immediate area. We can discard this little group of coins as not having a sealed context and thus unlikely to help us form a diachronic snapshot of late fourth- or third-century BC Sardis. Instead, it is a reminder that the Hellenistic domestic occupation of the area lasted beyond the early third century BC.

The group of coins found in Units XX and XIX may have been a little purse of circulating coins, lost in a fire in the house sometime at the end of the fourth or beginning of the third century BC. The dates of the coins are internally consistent, and the recovery of the coins along with restorable whole pots, as well as the sealing by the roof tiles, allows me to make such a judgment. Three of the coins-the unit and

Hanfmann, Mitten, and Ramage 1968, pp. 13-14.
Houghton and Lorber 2002, pp. 320, 375.
fractions with the types of Herakles/bow in case, Herakles/horse and rider, and Herakles/club types were probably minted in Sardis (see Section 2.2).

The coins from Ephesus are dated generally to the late fourth and early third century BC; the Ephesian series has not had the benefit of a numismatist's attention since Barclay Head arranged them for the British Museum catalogue in 1892. They may have been contemporary with the bronze coins minted for Alexander the Great and his successors, as their metrology would suggest that they also functioned as a fraction. Thus, the owner of the house may have had a purse of two units and seven fractions to spend, very likely all from the mint at Sardis or Ephesus. The circulation hoard shows us an interesting picture of what was available for smaller purchases at the end of the fourth and beginning of the third century BC: small bronze units or their fractions; coins from the Ephesus mint were circulating freely in Sardis as co-equal to the units; and fractions produced in the Sardis mint. Conversely, in the late fourth and early third centuries BC , it appears that the bronze Herakles/Apollo and Apollo/club coins from the Sardis civic mint were not yet in circulation.

### 3.2.2 Other Early Hellenistic Deposits

Given the few Hellenistic strata that have been excavated at Sardis, I will only be able to discuss Hellenistic coins in order to examine how long they may have been in circulation before being deposited. Unfortunately, this lack of intact Hellenistic strata hinders us from fully understanding the chronology of the late fourth- to third- century BC coins, some of which are still problematic in terms of the date of their striking. For instance, the Macedonian shield/Macedonian helmet bronzes are called either Lysimachean or dating to the period after Lysimachus' reign. Johnston (who preferred an early third-century BC date) identified 25 such coins (M7 GR 22-24); the archaeological contexts were not clearly Hellenistic for any of these coins. The current excavations have only recovered three of these coins, two of which were turned in to the excavation (NoEx) and one of which was from a secondary or tertiary (Late Roman) deposit. The many examples from sector HoB were from mixed fills: clearly there were Hellenistic buildings here, but the imposition of a Late Roman
villa mixed the levels, especially in the laying of water pipes. Similarly, the other deposits in PN showed much mixing of material from Lydian to modern, due to intensive use of the area.

Third-century BC coins are found in a few thirdcentury $B C$ strata that have been recognized on the site. Hanfmann identified a phase in Building C (HoB) as being Hellenistic, due to three coins (C62.0178, a silver drachm of Alexander III; C62.0345, Alexander III or his successors; and C62.0238 of Antiochus III), with an amphora handle of the third century BC. ${ }^{61}$ Berlin's study suggests that the Hellenistic layers are not necessarily distinguishable from the later Roman activity in the area; Building C itself, she suggests, dates to the fifth century BC. ${ }^{62}$ Another Hellenistic building, in sector MMS, identified by the excavator to date to the fourth century BC due to the pottery, contained a coin that I identified as from the mint of Sardis during the reign of Antiochus II (no. 78.4). In the sarcophagus found at Hacı Oğlan (Tomb 61.3), the identified Hellenistic coin with the burial dated to the late fourth or third century BC (C61.0023), while the pottery was probably third century BC (see Section 2.5.1). ${ }^{63}$

One coin minted under Antiochus I (no. 72.4) comes from a Hellenistic-era deposit in Field 49; the coin may attest to a new area of residential building in the early third century BC , but the area remained in constant use for residences through the early first century AD. The coin appears in a context with late second- to first-century BC pottery. ${ }^{64}$ The same span of dates is seen in a second coin of Antiochus that was excavated in the same residential area (no. 72.3), in a deposit that included a coin of Augustus (no. 98.1). According to pottery analyst Elizabeth DeRidder Raubolt, this deposit came from a destruction level dating to the early first century AD, but it is unclear if the coin was part of the fill that contained earlier materials. Coins of Antiochus I were also found with a coin of Seleucus II (no. 81.3). This deposit comes from the raising of the ground level in the second quarter to the middle of the first century AD , as terracing for the

61 C62.0238 was mentioned, but not numbered, in Hanfmann 1963, p. 10; Rotroff and Oliver 2003, pp. 12-13.

62 Berlin, HoB Report 2015, pp. 4-5.
63 Rotroff and Oliver 2003, pp. 15-16.
64 Berlin, Compiled Report 2015, p. 48.

Wadi B Temple, where there is also Hellenistic pottery as a secondary deposit, along with first-century AD pottery. ${ }^{65}$ It appears that the Hellenistic coins are in a secondary deposit, and do not show evidence that they were in use for 300 years.

Only one deposit might suggest a long period of circulation for Hellenistic coins. An Early Imperial context in sector MD2 yielded a coin of Antiochus III (no. 90.1), associated with a coin of Pergamum, under the magistrate Demophon between 4 and 10 AD (no. 106.1). ${ }^{66}$ It was found on a plaster floor; the subfloor contained third-century BC pottery.

### 3.2.3 Theater Deposits

Sardis' Theater was excavated between 2006 and 2010 in order to understand the phasing of the site. The structure is argued to be the theater mentioned in Polybius (Hist.7.15-18) during the dramatic recounting of Antiochus' siege of the city in 214 BC . Thus, before any excavations had taken place, scholars assumed that the building dated prior to the late third century $\mathrm{BC} ;{ }^{67}$ after excavation, traces of the third-century BC structure remain elusive. ${ }^{68}$ Excavators had to take into account massive construction and destruction fills, as well as intense modern agricultural usage of the area of the scaenae frons; the excavations encompassed a small part of the scaenae frons, part of the parados wall and retaining wall (which were reconfigured in the Roman period), and trenches within the seating area of the cavea. Much of the southern part of the cavea was built close to bedrock on shallow fills that contain few useful deposits of any period. Yet in the northwestern section of the cavea, deep fills were added over the remains of a Lydian house, destroyed in ca. 547 BC. Much of the fill was Hellenistic in origin, but the seats were robbed out or replaced, presumably beginning in the Imperial period, in order to expand the seating. The Hellenistic fill thus consisted largely of redeposited earlier material. ${ }^{69}$ Almost all the coins found in the fill were minted in Sardis.

[^55]One coin minted in Pergamum, of contested date, was found in the fill (no. 21.1). The coin shows the helmeted head of Athena on the obverse and an ivy leaf with the name of Philetaerus on the reverse. It is worn. Hans von Fritze, who studied the series in 1910, suggested that these particular coins were only minted by Attalus I, and thus could be dated to 241197 BC, a date broadened in SNG Tübingen to 260-170 $\mathrm{BC} .{ }^{70}$ Von Fritze's argument was that the flans became broader and flatter and a second curl pops out from under Athena's helmet in coins minted under Attalus II and Attalus III. Johnston dated the Athena/ivy leaf coins to the mid-second century BC , though she gave no reason why. ${ }^{71}$ More recently, Ulla Westermark suggested that the date remain in the third century, specifically $260-230 \mathrm{BC} .{ }^{72}$ It is now clear from the associated pottery (which has a terminus post quem of $175-150 \mathrm{BC}$ ) that the coin must have been struck before the mid-second century; the dates proposed by the German scholars are to be preferred.

The associated Sardis civic coin, the Herakles/ Apollo denomination, had two countermarks on it, both found on the obverse (no. 52.46). The underlying type was worn. The first countermark could not be read, but the second countermark was the club countermark used by the city in the first half of the second century BC (see App. 1).

There were more Hellenistic coins found in other Theater fills, which the excavators agreed were residual coins due to the Roman pottery in the same context. It is interesting that all of the Hellenistic coins come from Sardis (12 or 13) or Pergamum (1), and almost all of the Sardian coins come from the civic mint. There are a few comparisons that can be made within Sardis: the PN deposit noted above contained coins from Ephesus along with coins from the royal mint at Sardis (see above, Section 2.2.1). PN is particularly rich in coin from mints outside of Sardis, with third-century BC coins from Alexandria Troas, Colophon, Ilium?, Macedon, Miletus, Smyrna, Thrace, and coins from the civic and Seleucid mints at Sardis. Similarly, at HoB, where Hellenistic levels

[^56]were present, but were difficult to distinguish from later levels, third-century BC coins from Aegae, Ephesus, Macedon, and Thrace were present, along with coins from the civic and Seleucid mints at Sardis. The coins from the Theater fills would represent the coins brought to the Theater in order to buy food or drink. ${ }^{73}$ The coins could have been lost in the third-century BC Theater and brought into later levels when the seats were repositioned or replaced, or other elements of the Theater reconstructed or repaired. Alternatively, construction fills were brought in from an area outside the Theater, and thus the coins are in a tertiary deposit. The homogeneity of the coins argues against the latter solution, given other Hellenistic deposits in Sardis.

It is quite clear that the Theater was damaged and repaired in the Early Imperial period, very likely due to the earthquake of 17 AD ; further repairs and construction are seen in the mortared rubble walls ringing the western half of the cavea. ${ }^{74}$ Although there are no fills that can be dated exclusively to the Early Imperial period, perhaps seven coins from the fills came from the first century: Augustus (nos. 102.1, 104.1, 216.3); Nero (no. 157.2); Vespasian (no. 220.4) and two first- to third-century unidentifiable coins (nos. 230.16, 230.80).

Continued use of the Theater can be seen in coins of the second and third centuries (nos. 109.1, 116.1, 172.1, 303.2). Fourth-century coins may attest to performances continuing into this era; however, it should be remembered that fourth-century activity is found at the top of the hill as well, and so these coins may be relics of travel up and down the slope or secondary depositional forces. These coins range from the very beginning to the very end of the century (nos. 351.5, 353.6, 547.2, 560.21, 660.1, 679.2, 684.46, 699.1, 750.24, 790.2, 790.10, 836.12, 886.107). Small fifth-century copper-alloy coins were also found here. Several are illegible AE4 coins (nos. 1003.1805-11), but of the identifiable coins, the entire fifth century is represented (nos. 815.3, 944.2, 963.72, 963.123, $963.72,987.30,987.43,1004.139)$. A few later coins were found as well; the last dates to the middle of the sixth

[^57]Table 3.2 Coins from Hellenistic trash midden, MMS/S 94.2 Baskets 47-50 Lot 30.

| Mint: Types | Date of Issue | Catalogue No. |
| :--- | :--- | :--- |
| Sardis: Herakles/Apollo | $245 / 220-2^{\text {nd }}$ century BC | $52.114,52.130$ |
| Pergamum: Athena/coiled serpent | $215-175$ BC | 23.5 |
| Sardis? For Antiochus III: Apollo/Apollo leaning on tripod | $213-203$ BC | 90.2 |
| Uncertain Seleucid | $280-203$ BC | $93.4,93.11$ |
| Uncertain Hellenistic | Late $4^{\text {th }}-1^{\text {st }}$ century BC | 94.21 |

century, and are small enough to be considered coins lost in transactions in the cavea (nos. 1026.4, 1026.13, 1036.1). Perhaps the Theater saw its last performance or civic meeting only in the mid-sixth century.

One token was found in the excavations: it is lead, with an anchor and a $\Delta$ on the other face ( $\mathbf{L 4}$ ); this may have been used as a theater ticket. A bronze tessera from Ephesus also comes from the theater; it dates to the first or second century. It is bifacial and has a bust of Artemis with a quiver behind her shoulder and a stag standing right, with the legend $Є Ф € С І \Omega \mathrm{~N}$ (no. 114.1). Some Ephesian tesserae have inscriptions testifying to their use as amulets to ward off diseases (known as "Ephesian letters"), ${ }^{75}$ but it is more likely that this tessera was used as a theater ticket or a coin.

### 3.2.4 Second-Century BC Deposits

Except for the Pergamene coin found in the Theater deposit and those found in graves, most of the secondcentury coins of Pergamum are unstratified or found in Late Roman fills in HoB and Field 49. One primary deposit that included coins was a trash midden in MMS/S (Table 3.2), dated by its pottery to the midthird to mid-second century BC (no. 23.5). ${ }^{76}$ The coins are contemporary with the pottery.

One Pergamene second-century coin was found in a Late Hellenistic deposit (the date obtained by a lamp) in ByzFort (no. 24.2), accompanied by a secondto first-century BC coin from Smyrna (no. 48.1). ${ }^{77}$ A second Pergamene coin (no. 23.8) was found in a (late) Hellenistic ash layer, also in ByzFort. ${ }^{78}$ One robber trench in Field 49 that may date to the second

[^58]or first century BC contains a civic coin of Sardis (245/220-second century BC, no. 52.32). ${ }^{79}$ That is, the second-century BC deposits tend not to have many earlier coins in them, at least in the few deposits that excavations have allowed us to examine.

### 3.3 Early Imperial Contexts

Primary Augustan contexts are difficult to isolate at Sardis, very likely due in part to the cleanup of the earthquake of 17 AD , but there are a few primary deposits dating to the first or second century that include Augustan coins. We know from the wear on Early Imperial coins that these coins circulated for a long time before their deposition; it is unclear if we need to suggest that the coins circulated into the fourth century, even if those are the companion coins in the strata. It may be that the Augustan coins in Late Roman contexts are simply in a secondary context. For example, deposits from MMS that have Augustan and fourth-century coins may reflect the churning of the ground for the numerous roads, drains, and houses that were added to this area in the fourth and fifth centuries; that is, they are likely to be residual.

One primary deposit that contained an Augustan coin also contained a Hellenistic coin (see above). A plaster floor in a structure at MD2 ${ }^{80}$ had an occupation fill lying on top of it. In that fill or on the floor were found two coins: one coin from the Pergamene mint from the time of Augustus (no. 106.1) and one minted in Sardis (?) during the reign of Antiochus III (no. 90.1; very worn, see above). None of the pottery was Late

[^59]Table 3.3 Coins in soil layer within fill, ByzFort 91.17 Basket 19 Lot 47.

| Mint: Types | Date of Issue | Catalogue No. |
| :--- | :--- | :--- |
| Uncertain: illegible (fragmentary) | Hellenistic | 94.85 |
| Uncertain: Head of Augustus r./worn smooth | $27 \mathrm{BC}-14 \mathrm{AD}$ | 216.2 |
| Dioshieron: Head r. laur./head of Zeus | 27 BC ?-37 AD | 136.1 |
| Sardis: Herakles/Apollo, Opinas, Akiamos | $14-27 \mathrm{AD}$ | 150.5 |
| Termessus Minor: Head of Tiberius/galloping horse | $17-37 \mathrm{AD}$ | 214.1 |
| Sardis: Senate/Zeus Lydios, Mnaseas | 65 AD | 159.1 |
| Sardis: Plotina/worn smooth | $112-117 \mathrm{AD}$ | 172.3 |
| Uncertain: worn smooth | $1^{\text {st }}-2^{\text {nd }}$ century AD | 230.9 |

Table 3.4 Coins from Field 49 09.1 Basket 45 Lot 49: earthquake cleanup.

| Mint: Types | Date of Issue | Catalogue No. |
| :--- | :--- | :--- |
| Sardis, for Antiochus I: Athena/Nike | $280-261$ BC | 72.3 |
| Sardis, for Seleucus II: Athena/Apollo testing bow | $246-241$ BC | 81.3 |
| Uncertain Hellenistic | $3^{\text {rd }}-1^{\text {st }}$ century BC | $94.10,94.83$ |
| "Asia": Augustus/inscription | $27 \mathrm{BC}-14 \mathrm{AD}$ | 98.1 |

Roman. It is possible that coin no. 66.1, a Republican as dating to 217-87 BC also originally came from this Early Roman layer, as the hard-packed earth floor from which this as came was said to have undulated and thus was difficult to follow in some spots. ${ }^{81}$ Alternately, it could be residual, having been brought into the mix during the Late Roman remodeling in the house. ${ }^{82}$

An Augustan coin was part of the second-century votive deposit at the Wadi B Temple, placed by the Temple in the Antonine period (see below, Section 3.3.2). An Imperial secondary deposit is seen in a dump in the ByzFort sector. ${ }^{83}$ It included a group of Augustan to Julio-Claudian coins with one early second-century coin; the last had one side worn smooth, suggesting either a long period of circulation before being deposited in the dump or exposure to severe secondary depositional forces (more likely the latter, since the obverse was legible).

[^60]A discrete soil layer within a fill in ByzFort contained one Hellenistic coin and seven first- to early second-century coins (Table 3.3). ${ }^{84}$ The Hellenistic coin was worn, but so was the reverse of the coin of Plotina. Tentatively, then, we can suggest that Augustan and Julio-Claudian coins were available for use in the second century.

Most of the Julio-Claudian coins from the excavations come from the strata that were much disturbed in antiquity in MMS or ByzFort. One coin comes from a Hellenistic/Roman fill in MMS/S, where the latest pottery was dated to the first or second century (no. 154.2). In the same lot was an unidentifiable Hellenistic coin (no. 94.63) and several Hellenistic molded bowl fragments. Field 49 had a number of small fills that were dated to the Early Imperial period. Some of these contained coins of an Augustan or Julio-Claudian date, but many did not.

A fill in Field 49 was closely associated with the cleanup after the earthquake of 17 AD , due to the plaster fragments and other domestic detritus found in the layer. The Hellenistic coins here were found with Hellenistic pottery and probably Early Imperial sherds (Table 3.4). The deposit contained one coin

84 Gürtekin, Final Field Report: ByzFort 91.17, p. 6; the coins from this deposit were not cleaned until 1992.

Table 3.5 Coins from Early Roman fills in Field 49 (identified by pottery).

| Trench/Lot No. | Mint: Type | Date or Era of Issue | Catalogue No. |
| :---: | :---: | :---: | :---: |
| 09.1 Lot 56 | 1. Pergamum: Athena/serpent coiled <br> 2. Sardis: Herakles/Apollo | $\begin{aligned} & 215-175 B C \\ & 245 / 220-2^{\text {nd }} \text { century BC } \end{aligned}$ | $\begin{array}{\|l\|} \hline 23.4 \\ 52.113 \\ \hline \end{array}$ |
| 09.1 Lot 62 | 1. Sardis: Herakles/Apollo <br> 2. Uncertain Hellenistic | 245/220-2 $2^{\text {nd }}$ century BC <br> Late $4^{\text {th }}-1^{\text {st }}$ century BC | $\begin{aligned} & 52.33 \\ & 94.70 \end{aligned}$ |
| 10.1 Lot 48 | Sardis: Herakles/Apollo | 245/220-2 ${ }^{\text {nd }}$ century BC | 52.122 |
| 10.1 Lot 52 | 1. Uncertain Seleucid <br> 2. Uncertain Hellenistic | $\begin{aligned} & 280-187 \mathrm{BC} \\ & \text { Late } 4^{\text {th }}-1^{\text {st }} \text { century BC } \end{aligned}$ | $\begin{array}{\|l} 93.37 \\ 94.19,94.26,94.44 \end{array}$ |
| 10.1 Lot 56 | Uncertain Seleucid | 280-187 BC | 93.16 |
| 10.2 Lot 4 | Sardis: Herakles/Apollo | 245/220-2 ${ }^{\text {nd }}$ century BC | 52.49 |
| 11.1 Lot 88 | Sardis: Herakles/galloping rider | Late $4^{\text {th }}$ to $3^{\text {rd }}$ century BC | 17.2 |
| 11.1 Lot 90 | Uncertain, worn smooth | $11^{\text {st }}-3{ }^{\text {rd }}$ century AD | 230.43 |
| 11.1 Lot 91 | Sardis: illegible/elephant l. | 213-203 BC | 88.2 |
| 11.1 Lot 93 | Sardis: illegible/elephant l. | 213-203 BC | 88.1 |
| 11.1 Lot 104 | Ephesus: bee/stag l. | 305-288 BC | 36.1 |
| 12.1 Lot 117 | Uncertain Seleucid | 280-187 BC | 93.2 |
| 12.1 Lot 122 | 1. Sardis: Dionysos/panther <br> 2. Ephesus | $\begin{array}{\|l} \hline 2^{\text {nd }}-1^{\text {st }} \text { century BC } \\ 1^{\text {st }}-3^{\text {rd }} \text { century AD (tessera) } \end{array}$ | $\begin{aligned} & 56.4 \\ & \text { L1 } \end{aligned}$ |
| 12.2 Lot 16 | Alexandria: Alexander/eagle | 246-205 BC | 65.1 |
| 12.2 Lot 29 | 1. Sardis: Herakles/Apollo <br> 2. Uncertain Hellenistic <br> 3. Uncertain Roman Provincial | 245/220-2 $2^{\text {nd }}$ century BC <br> Late $4^{\text {th }}-1^{\text {st }}$ century BC <br> $1^{\text {st }}$ century AD | $\begin{aligned} & 52.69 \\ & 94.72 \\ & 230.60 \end{aligned}$ |
| 12.2 Lot 30 | 1. Ephesus: bee/stag r. <br> 2. Uncertain Seleucid | $\begin{aligned} & 202-133 \text { BC } \\ & 285-187 \text { BC } \end{aligned}$ | $\begin{aligned} & \mathbf{3 9 . 1} \\ & 93.36 \end{aligned}$ |
| 12.2 Lot 34 | Pergamum: Athena/coiled serpent | 215-175 BC | 23.10 |
| 13.1 Lot 113 | Sardis: Augustus/illegible | $10 \mathrm{BC}-14 \mathrm{AD}$ | 149.2 |
| 13.2 Lot 139 | Antioch: Antiochus III/Apollo | 233-187 BC | 91.2 |
| 13.2 Lot 140 | 1. Sardis: Apollo/Apollo with tripod <br> 2. Uncertain Roman Provincial | $\begin{array}{\|l\|} \hline 213-203 \mathrm{BC} \\ 1^{\text {st }} \text { century AD } \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline 89.1 \\ 230.67 \\ \hline \end{array}$ |

from the reign of Augustus. ${ }^{85}$ Again, it is unclear if the Hellenistic coins were in circulation in the Augustan period, or if they are residual to the Early Imperial fill.

An undisturbed fill in the area (F49 09.1 Basket 48 Lot 56) contained two Hellenistic coins: one of Pergamum dated ca. 215-175 BC (no. 23.4), and one Sardis civic coin (no. 52.113), which I argued dates from $245 / 220$ to the second century BC. In this case, there were no Roman coins; only the pottery provided the terminus post quem of the Early Roman period. Three deposits under floors then are composed primarily of Hellenistic coins, while the pottery in the deposit suggests that the deposit was not closed until the

85 DeRidder Raubolt pers. comm. for all the Early Imperial deposits outlined here; Cahill, pers. comm.

Early Imperial period; this may give us a suggestion that the coin pool in the Early Imperial period may have included a large number of Hellenistic coins.

A mixed fill in Field 49 12.2 Basket 19 Lot 34 was described as a fill underlying a floor within a residence; the latest pottery of this phase dated from the first century $B C$ to the first half of the first century AD, although the fill included sherds from the Lydian and Hellenistic periods. The Lot contained one worn coin of Pergamum, which is dated ca. 215-175 BC (no. 23.10), but it is unclear if the coin was part of the circulation pool of the first century BC/AD or if it was residual.

The remaining fills in Field 49 were preliminarily identified as Early Roman by the pottery in the fill (Table 3.5); these are occupational fills associated
with features in the trench. Of the 21 lots noted below, only five have Early Imperial coins in them; 20 have Hellenistic coins in them, and most of these Hellenistic coins date to the third or second century BC. This strongly suggests that Hellenistic coins, up to 200 years old, were widely in use in the first century AD.

Jeroen Poblome, who has written a series of articles studying the coin and pottery contexts in Sagalassus, found that the Early Imperial coins were also often part of a complex stratigraphic record, muddied by post-depositional events. He was not ready to make a comment on how long coins remained in use before being deposited, and indeed, suggested that coins are not good chronological markers for Imperial deposits; but he noted that "as a rule of thumb, a period of use up to a century should not be considered exceptional" for the coins. ${ }^{86}$ For example, the strata dated by the pottery to $25 \mathrm{BC}-50 \mathrm{AD}$ had few coins, but the coins that were associated with these layers dated overwhelmingly to the Hellenistic period; some were minted 200 years before the pots were made. ${ }^{87}$ Yet he admitted that there were some Late Roman coins in the same deposits ("infiltrated") and suggested that the complexity of the chronology may have been due to the amount of terracing that occurred in conjunction with building activity in the Imperial period. ${ }^{88}$

As noted above, the lack of Early Imperial coins is apparent in most of the comparison sites to Sardis. We would expect that the change in denominations and types would render older Hellenistic coins useless in the Imperial period. However, judging from the evidence of Early Imperial strata-which are dated by the pottery and not by the coins-up to two (or three?) hundred-year-old coins were still in circulation in Sardis (and probably most of Roman Asia) in the first century. This chronological disparity appears to be rectified in the second century, when Hellenistic coins seem to have finally dropped out of circulation.

[^61]
### 3.3.1 The Votive Deposit in Field 49

An unusual group of well-preserved domestic artifacts was uncovered in Field 49, a monumental terrace that rises prominently above the Roman city. In addition to their importance as documentation of ritual activity practiced by Sardians during the first century AD, the deposits are evidence for the Roman revitalization of this area of the city as these excavations have revealed a rapid succession of occupational phases dating to the first century. ${ }^{89}$

Field 49 held at least moderately wealthy home(s) during the first century AD. Two ritual deposits were placed below the floor of a room located near the western edge of the terrace. One part of the deposit was found intact, buried just beneath the floor surface, which was laid over the remains of earlier foundations. ${ }^{90}$ The other part had been shattered in antiquity, although all of the contents remained in place. The intact vessels of the deposit consisted of a pair of identical, locally-made bowls, one of which was flipped over and placed on top of the other. Inside the bowl was found a complete eggshell, pierced by a small hole in order to empty its contents; one bronze nail; one long bronze needle; two badly-corroded iron implements that appear to feature decoration, one of which was stuck to a small white pebble; and a coin, giving a terminus post quem of 65 AD to the entire deposit (no. 157.1).

The second part of the deposit was found at the same level as the first, about a meter to the north. Here, a thin-walled mug was nestled between two slightly upturned stones on the southern face of an earlier drain. It was covered by an Eastern Sigillata B dish acting as a lid. Although the vessels were crushed in antiquity, the same implements as the other deposit were found clearly associated with the two vessels, including an eggshell, a bronze pin, a bronze needle, and iron implements. A second coin dating between 54 and 59 was found during sieving of the associated earth and was also likely placed inside of the mug (no. 124.1).

The former coin was minted in Sardis during the reign of Nero, as can be seen by both the portrait and

[^62]90 See Cahill 2014b and 2015.
the surviving portions of the legend. This is a copperalloy coin of the smaller of two denominations minted under Nero. The reverse depicts Zeus as he is commonly shown in Lydia, standing looking left, with a long tunic and himation, and holding a staff under his left arm. In his outstretched right hand he holds an eagle. The legend reads EПI(meleia) TI(berius) MNASEOU CAP $\Delta[I A N \Omega N]$ : "from the mint at Sardis, under the care of [the magistrate] Tiberius Mnaseas." The detail on Zeus is flattened, but the details of the head of Nero, even in the higher sections, appear to be intact under the corrosion; additionally, the " C " in CAP $\triangle$ IAN $\Omega \mathrm{N}$ is fading. Thus, the flattening of the details is due to the use of an older die; the coin came almost directly from the mint into the bowl. Tiberius Claudius Mnaseus was a magistrate who minted several coin types for the city; Burnett, Amandry, and Ripollès argued that stylistically, Mnaseus' issues can be placed between 63 and $68 .{ }^{91}$ The deposit can date no earlier than this coin, and I argue that it was probably assembled close to that date.

The obverse of the latter coin has the head of the Senate and traces of the legend $\Theta$ EON CYNK $\Lambda$ HTON (Holy Senate), with Z-MY dimly visible beside the head. Thus, the coin was minted in Smyrna, and Burnett, Amandry, and Ripollès gave it a date of $54-59$ due to the magistrate (who should be) named on the reverse, Aulos Gessios Philopatris, combined with the head of the younger Nero found on other coins of Gessios. ${ }^{92}$ On this coin, the Roma reverse was hammered completely flat-there was neither trace of the legend nor the figure-and engraved with a beautiful little roaring lion standing on a ground line. ${ }^{93}$ This was no amateur attempt at carving the figure, as can be seen in the impression of the reverse, but it was done by a practiced hand who supplied a figure he apparently could not find on a coin reverse. This coin shows clear indicaations of wear, which may

[^63]be primarily the result of the condition of the vessel with which it was associated: unlike the Nero coin above, it was exposed to post-depositional processes after the mug shattered. The wear could also have occurred as the reverse was hammered.

Thus, we have two local copper-alloy coins in the deposit, one chosen because of the reverse of Zeus Lydios. Since the depositor could not find an appropriate reverse of the female goddess he wanted to honor, he chose a comparable coin that had a lion, the animal of the goddess Cybele, engraved on the reverse. ${ }^{94}$ On the reverses we have paired in the deposit the Father of the gods and the Mother of the gods (or Mother of the mountains), whose powers encompass both the storms and the land. Perhaps they were paired here in a plea for protection from further destructive earthquakes. ${ }^{95}$

The ritual deposits are nearly identical to several small finds uncovered during the early twentiethcentury excavations of the site around the Temple of Artemis. Like the Field 49 deposit, ceramic vessels were found placed at the bases of walls, though usually outside of buildings; several were placed behind the row of stele bases on the north side of the "Lydian Building" (Lydian Altar). Butler described the deposits as:
more than a dozen ovoid cups . . . These were found at the base of walls, and usually outside of buildings; several of them behind the row of stele-bases on the north side of the Lydian Building. Each cup contained a coin, the shell of an egg, and a small bronze instrument . . . apparently consisting of twisted wire . . . seven are still perfectly preserved, and in one the eggshell is whole but for a small hole in one end. ${ }^{96}$
Bell noted that all of the coins were bronze and most were illegible, although due to the size of the flans,

[^64]96 Butler 1922, pp. 127-28.

Table 3.6 Coins from the terrace fill for the Wadi B Temple.

| Mint: Types | Date of Issue | Catalogue No. |
| :--- | :--- | :--- |
| Sardis: Herakles/Apollo | $245 / 220-2^{\text {nd }}$ century BC | $52.66,52.73,52.86,52.120$ |
| Sardis: Tyche/Zeus Lydios | $245 / 220-2^{\text {nd }}$ century BC | 51.1 |
| Tralles: Zeus/eagle | $100-27 \mathrm{BC}$ | 62.1 |
| Uncertain Seleucid/Hellenistic | Late $4^{\text {th }}-1^{\text {st }}$ century BC | $93.3,93.19,93.32,93.34,94.40,94.84$ |

he suggested that most came from Roman Provincial mints. He also noted that the pottery dated to the Imperial period. ${ }^{97}$ Another example of this type of deposit is seen in one grave, which contained two cups, one serving as a lid for the other (see below, AhT Grave 67.15). Inside was a coin carrying on the obverse the head of the Senate and on the reverse a hexastyle temple (C67.0838, M7 GR 255), the coin dating to the end of the first or beginning of the second century. There were no other recorded finds from the grave deposit.

The votive deposit in the house shows that the depositor carefully selected and manipulated coins for it, probably around 65 AD . The deposit was likely made in order to protect the new structure and those who lived there from malevolent forces, including further

97 I am a little confused as to the identity of the coins found in these deposits. After describing the deposit, Bell wrote, "These cups were for the most part (cf. nos. 208, 228) found in the same general part of the excavations, to the west of the north side of the temple." Bell's note 5 here records "No. 242 was found in quite a different part of the excavations." The fact that only three of the coins proved to be legible makes it difficult to generalize about them; but in every case they were of a copper-alloy; none, so far as could be determined, were from the Roman Imperial mints; the cups and bowls containing them seem all to have been made in Imperial times, though coin no. 242 dates from before 133 BC (Bell 1916, p. ix). Possibly the coin found in the cup was of the type seen in Bell's no. 242 (Apollo/club), but was not legible enough to get a separate number? Coin 208 is another Late Hellenistic coin, from Smyrna (Tyche/Aphrodite Stratonikis, with the magistrate Apollonios, now dated to 75-50 BC; Milne 1928, no. 362); coin 228 is from Germe with the head of Trajan and the reverse is the head of Apollo. Coins 208 and 228 have two very different coordinates, different levels, and were found about two months apart; coin 242 has a third date of discovery, different coordinates, and a different level. However, there are four coins that are given the same coordinates, levels, and date of discovery: 208, 213, 101, and 257. Bell listed coin 213 as Nero/Nike l., from Smyrna, providing an interesting parallel to the discovery in Field 49. Coin 101 dates to the time of Philip V (Herakles in a lionskin helmet/youth on horseback). And coin 257 is a Late Hellenistic coin from the mint at Sardis: Herakles in a lionskin helmet/lion walking, another interesting parallel to the Field 49 votive deposit, if it was found in a cup. It is noteworthy that the pottery is called Imperial in date, but some of the coins in the cups may date to the Hellenistic period, perhaps another confirmation of how prevalent these older coins were in the Imperial marketplace.
destructive earthquakes. The fairly short time span to which the Field 49 ritual deposits, those found around the Artemis Temple, and that in one grave belong may suggest that the proliferation of this local form of ritual activity was in response to particular historical and social circumstances during the rebuilding of the city in the first (and second ?) centuries.

### 3.3.2 The Wadi B Temple

The large plateau at the northern edge of two ridges (ByzFort and Field 49) was named Field 55. In order to make the plateau larger in antiquity, a massive temenos wall was built to hold the terrace that held the huge Early Imperial temple dubbed the "Wadi B Temple." ${ }^{98}$ The Temple dates to the Julio-Claudian period, hence the fills should represent secondary deposition of Early Imperial coins, much like the earthquake repair fill in Field 49. Only a portion of this terrace has been excavated, and results remain preliminary. ${ }^{99}$ The coins identified from this fill are all Hellenistic (Table 3.6); much of the pottery is also Hellenistic, but the latest dated examples do come from the Early Imperial period. Again, this may be an indication that the city relied heavily on earlier Hellenistic coins during the last part of the first century BC and the early first century AD. Overall, it looks like Early Imperial terrace fills from Sagalassus, which show the same disjunction between the dates of the pottery and the dates of the coins found with it.

The resulting Temple was the second-largest known temple in the city, constructed in the center of the Roman city. Since a fragment of an inscription mentioning the Senate was found on an architrave

[^65]Table 3.7 First- and second-century coins found in the excavations of the Wadi B Temple.

| Catalogue No. | Obverse Type/Reverse Type | Mint | Context |
| :--- | :--- | :--- | :--- |
| 230.98 | Livia?/Julia? | Pergamum? <br> (cataloged as <br> uncertain mint, <br> 1tt century AD) | Trench II "a group of four coins (so far) all found <br> together, between .59 and .63 below top of column <br> base right up against the west side of the plinth" <br> (Fieldbook SE Wadi B 81 I: 43) |
| $\mathbf{1 0 0 . 1}$ | Smoothed [Hadrian]/octastyle temple | Bithynia | As above |
| 180.1 | Faustina Major/hexastyle temple | Sardis | As above |
| 126.1 | Antoninus Pius/Cybele enthroned | Smyrna | As above |
| $\mathbf{1 5 1 . 5}$ | Germanicus/Athena standing | Sardis | "0.46 m north of central paving block, 0.55 m below <br> top of column base" (information from coin envelope) |
| $\mathbf{1 6 1 . 1}$ | Augustus?/illegible | Sardis? | "Trench VII Lot 30, directly in front of N stylobate" <br> (information from coin envelope) |
| $\mathbf{2 2 2 . 1}$ | Faustina Major/illegible | "Trench VII Lot 24 deposits cut by streambed" <br> (Fieldbook Wadi B IB 82 I: 82) |  |
| Coin No. <br> 1982.0178 | Not a coin? Or a coin beaten flat (to 38 <br> mm) so no images are apparent? | Sardis | "Trench VII, cutting back W scarp" (Fieldbook Wadi <br> B IB 82 I: 148, no. 2) |
| $\mathbf{1 7 8 . 3}$ | Marcus Aurelius as Caesar/winged <br> caduceus | Trench XII Lot 71 "on top of Lot 73", with brick, <br> mortar, architectural fragments (Fieldbook Wadi B IB <br> 82 I: 165-66. This was the only coin found in the lot.) |  |
| $\mathbf{1 7 8 . 2 , 1 7 8 . 5}$ | Marcus Aurelius as Caesar/winged <br> caduceus | Sardis | Trench XII Lot 73 "gravel in SW corner" (Fieldbook <br> Wadi B IB 82 I: 173; these were the only coins found <br> in the gravel) |
| $\mathbf{1 7 8 . 1}$ | Marcus Aurelius as Caesar/winged <br> caduceus | Sardis | Cleaning scarp, Trench XII, probably from bottom of <br> trench (1982) (information from coin envelope) |
| $\mathbf{1 7 7 . 1}$ | Marcus Aurelius and Caesar/ <br> inscription in wreath | Sardis | Trench XII Lot 67 reddish, muddy, with mortar and <br> Late Roman coins (Fieldbook Wadi B IB 82 I: 156-57) |

associated with the Temple, it was suggested that the Temple was built in response to the bestowal of a neokorate priesthood to the city. Ratté, Howe, and Foss suggested a Vespasianic date for the neokorate award, due to coins that were issued from the mint with a tetrastyle temple on the reverse; these coins do not use the word "neokoros" in the legend. ${ }^{100}$ They cited similar reverses on coins of Miletus, which also were missing the word, although the city may have had a neokorate temple to Caligula. ${ }^{101}$ Johnston had earlier dismissed the likelihood that the coins of Sardis reflected a neokorate cult under Vespasian, since temple types are not always connected to actual buildings. ${ }^{102}$ According to the coins, Sardis

100 As noted in Section 2.3, at present, it is not possible to determine the date of these coins.
101 Ratté, Howe, and Foss 1986, p. 66.
102 Buttrey et al. 1981, p. 12; in the debate whether temples on coins represent actual buildings, I think that the skeptics have a stronger argument than the positivists, e.g., see Burnett 1999; DrewBear 1974. Burrell and Hanfmann dated the award of the neokorate
obtained a second neokorate, probably sometime in the second century; the earliest coin mentioning Sardis' second neokorate dates to the end of this century. ${ }^{103}$ Thus, it is likely that the first neokorate was awarded in the first century; as with all other cities in Roman Asia, the cult was not noted in coin legends.

The original excavators suggested the Temple was destroyed in the second century, to lie in ruin for the remainder of antiquity. They based their arguments on the coins found in destruction debris overlying the Temple-none later than the second centurysince there was no datable pottery in the layer. Above this layer were a series of deposits laden with fourthcentury coins and fourth- or early fifth-century pottery. When I re-examined the contexts (see Table 3.7), I found that the Antonine coins were almost all found in Lots that had neither Late Roman pottery,

[^66]nor later coins in them. I thus reinterpreted the coins not as showing the destruction date of the Temple, but rather as a renewal of the purpose of the building in the second century. Antonine coins are not commonly found at Sardis. Of the 71 (possibly 72) Antonine coins known from the entire site from the excavation years 1958-2013, eight of them were found in the Wadi B Temple deposits. Four of the coins were found together. The coins are interesting in that they are all large copper-alloy coins, mostly of a size that is too large to lose easily and not be retrieved by the owner. This is especially true of the largest coin, which has a diameter of 34 mm and weighs almost 23 g . Only one of the four came from the mint at Sardis (no. 180.1); one was from Bithynia (no. 100.1); one from Smyrna (no. 126.1); and one perhaps from Pergamum (no. 230.98). Thus, it does not appear that this is a random collection, but a selection of coins, one from a mint rarely attested at Sardis.

The owner of the coin from Bithynia rubbed off Hadrian's head, inscription, and border of the obverse. Only under raking light is the outline of the top of the head clear. Yet there are no obvious scratches on this coin, so the owner carefully smoothed the obverse to make it appear one-sided, or to focus attention on the octastyle temple reverse, since the Temple at Wadi B was also octastyle. Uniface coins are known, though they are not pictured in dealers' catalogues, nor are they collected by museums; they remain rare. ${ }^{104}$

The temple reverse on the coin from Bithynia is matched by the coin from the Sardis mint, which also bears a temple on the reverse (this one minted for Faustina), albeit a hexastyle temple. The third reverse shows Cybele, and the last may depict two women of the Augustan house. The selection seems deliberate, and it can be compared to the choice of reverse types from votive deposits at Bath, ${ }^{105}$ or in the votive deposit in Field 49 (see above).

Also found around the foundations were two Julio-Claudian coins minted at Sardis, one depicting Germanicus and Athena (nos. 151.5, 161.1), and a

[^67]flattened metal disk that may once have been a coin (1982.0178). The most common type of Antonine coin found in deposits around the Temple are those that have the head of the young Marcus Aurelius on the obverse and a winged caduceus on the reverse, from the mint at Sardis. One of those coins was bent and cut with a chisel, perhaps a way of making the coin useless to anyone but the gods (no. 178.1); we are past the age when coins were commonly halved to provide smaller denominations. ${ }^{106}$ The same could be said about the coin from Bithynia, where the head of the emperor was smoothed away, making the coin appear to be a one-sided medallion, effectively "killing" it as well as the chiseling did. Such behavior is not uncommon with votive objects. Philip Kiernan reported that "bent, scratched and otherwise mutilated coins are common on French sites" and less common in Britain, but still present. He saw this especially happening in the second century, usually on coins minted earlier. ${ }^{107}$ Wigg-Wolf defines numismatic votive deposits as containing coins that are defaced and/or are gathered in one spot in a sacred area, and here, I think, we have both characteristics. ${ }^{108}$ In Corinth, coins in tombs are defaced with scratches (not as neatly obliterated as the Bithynian coin here, but the intent must be the same) or cut into roughly square shapes. ${ }^{109}$ Scratched, burned, and pierced coins are also found in some graves in Nempont-Saint-Firmin (France). ${ }^{110}$ These are likely to have been defaced for the same reason (to provide a suitable votive deposit), rendering the coins unusable in the physical world.

Thus, the placement, size, iconography, and dates of the coins argue that we are looking at (the remains of?) a votive deposit, not simply a marker of destruction. Given the size, iconography, wear, and the "killing" of one coin, as well as the special attention paid to the coin of Bithynia, I would suggest that the coins found in the trench were votive offerings. Coins are a normal part of votive gifts. Although temple inventories normally pay attention to gold and silver

[^68]coins, we know from other archaeological examples that copper-alloy coins were often given to the gods. ${ }^{111}$ Grierson classified these finds as "abandoned hoards," hoards that were never intended to be retrieved and are votive in nature. ${ }^{112}$ They may have functioned as something like foundation deposits and may have been placed in sacred pits or thesauri beside the temple. This is especially apparent in the four coins found grouped 60 cm below the plinth (and thus next to the foundation), the coin found 55 cm below the column base, and the coin found in front of the stylobate ("foundation for the columns" in fieldnotes).

111 Coins in contexts with cults or statues: coins were deposited in the temple in the Grove of Feronia at least during the Republican period (Livy XXVI.11); Lucian notes the offering of bronze coins to a cult statue (Philopseudes 20); Juvenal Sat. X.114-7 describes schoolboys offering bronze coins to "thrifty" Minerva; Suetonius Aug. 57.1 notes the annual rite of throwing a bronze coin into a well to ask for the health of Augustus; in Abu Mina (Egypt), an alabaster krater was excavated from under the altar which was placed over the grave of St. Menas, with coins ranging from the first century to the early fifth (Noeske 2000, p. 16).
"Thesauri" are known from physical remains and inscriptions as receptacles for votive coins throughout Italy. Copper-alloy coins are mentioned specifically, as temple personnel could retrieve these coins to pay for sacrifices or other temple upkeep. Some of these deposits are of single coins; some have large groups of coin, possibly contained in purses or pouches and sometimes hung from trees or buildings, or placed in boxes or pots. Crawford's study is limited to Italy and focuses on Republican practices (Crawford 2003). One thesaurus in Corinth, a hollowed-out stone, contained a lamp, stones, and 11 coins dating from the second to the first centuries BC. The coins only came from mints outside of Corinth (Edwards 1937, p. 247; Melfi 2014). Thesauri (Opferstöcke) become common in temples in Germany in the late first and second century AD. Pits along the north site of the temple at Bastendorff, newly renovated in stone in the second century, contained copper-alloy coins, including defaced coins (Wigg-Wolf 2005, pp. 378-79).
Copper-alloy and some silver coins were scattered in the sanctuary of Demeter and Persephone in Cyrene (Buttrey and McPhee 1998, pp. 1-2). Large deposits of antoniniani were excavated at Castellberg and Martberg, both Gallo-Roman temple sites of the Imperial period. "Irregular" coins were preferred at both sites, with reverses of Pax, Consecratio (flaming altar), and Consecratio (eagle), the highly-preferred reverse types (Kacynski and Nüsse 2009, pp. 96-100).
Copper-alloy coins are also used in foundation deposits: two such deposits were reported from the Sanctuary of Sol Indiges (Torvaianica, near Rome). One consisted of just one copper-alloy coin in the leveling layer; the other had five copper-alloy coins and a cup placed in a creamware jar. The deposits are dated to the Republican period (Jaia and Molinari 2011). Three copper-alloy coins were found in the "foundation for the foot of a libation-table in Lerna Square," Corinth. They dated to the third and second centuries BC (Edwards 1937, p. 247).

112 Grierson 1975, pp. 135-36.

### 3.4 Grave Gifts

Graves of all types have been found around Sardis, from built tombs to pithos burials, from sarcophagi to cist graves. ${ }^{113}$ Many of these were looted (beginning in antiquity), reused, or disturbed before archaeologists could excavate them. While this is not the place to study burial practices, there is one burial practice that can be examined in this volume, and that is burials with a coin included in the grave goods. A huge number of graves did not contain coins-sometimes that is a symptom of the era. ${ }^{114}$ It is clear that the placing of one coin with the deceased, most often near the head, is a ritual that was introduced in the Early Imperial period in Sardis, and it represents the introduction of a new manner of burial, especially when Sardis had strong ties to the Imperial government, in the period just after the earthquake of 17 .

### 3.4.1 Hellenistic Burials

Some Hellenistic burials in Sardis contain coins, usually with other grave goods, including pottery. The few in which we can compare the minting date of the coin to the terminus post quem of the pottery shows us that the coins chosen for the burials are contemporary with the pottery. ${ }^{115}$ However, Butler Grave 407, with two coins in it, provides a glimpse into how long coins could remain in circulation before being deposited in a grave. The burial contained a coin of Antiochus I and one of Pergamum dated to the late third or early second century BC. Thus, the Pergamene coin is found with a Seleucid coin, which was minted at least 50 years prior to the former. Rotroff and Oliver dated the pottery in the grave to ca. 150 to before the

113 For an overview of the cemeteries around Sardis, see McClanan in Buchwald 2015, pp. 153-54.
114 "Charon's obol" as thought to be a normal part of burials: Cormack 2004, pp. 116-17; contra Toynbee 1971, p. 49. Parallels in Roman Asia include Mytilene (Archontidou 2004, p. 72), Hierapolis (Travaglini and Camilleri 2010, pp. 12-13), and Pessinus (Thoen 2003, pp. 60-61); cf. Roman Palestine (Bijovsky 2015), Roman Corinth (Slane and Walbank 2006, p. 379), and Kenchreai (Rife et al. 2007, p. 160).
115 The Hellenistic burials with coins can contain jewelry, and normally contain multiple vases. Most have only one or two bronze coins; four have drachms: Bell 1916, nos. S3, S4, SW4, 25, 50, 60, $61,143,220,302,314,352,407,421,433,435,819$, and 836 ; Shear 1922, no. ©A; Hanfmann 1983, p. 123, but sic material of coin at Hacı Oğlan, Tomb 61.3 (both coins bronze); see Rotroff and Oliver 2003, pp. 189-208.
end of the first century BC (they give no indication of any earlier material in the grave, nor of any missing information). ${ }^{116}$ If the grave group is that late, then the coins were still available 50-100 years after they were minted, and the grave shows again why coins must only be used as a terminus post quem. Overall, it appears that the fashion for including precious metal or even bronze coins with the grave goods had largely passed by the second century BC.

Butler Grave 61 had a Hellenistic coin from the mint at Sardis, with the types of Tyche and Zeus Lydios (for the reverse, see below), found in a large assemblage of goods, including numerous lamps and unguentaria. Rotroff and Oliver dated the pottery to the first century BC , but noted that the group contains "earlier material." ${ }^{117}$ I have suggested an early date for this issue, given that one of these coins carries a countermarklikely to have been placed on Sardian coins in the second century BC (Section 2.2.2). The coin was either residual from the earlier Hellenistic phase of the grave, or was still in circulation in the first century BC.

### 3.4.2 Early to High Imperial Burials

The ritual of including a coin in some burials was revived in the early first century AD (Table 3.8). Judging by the pottery, most coins have a mint date approximating the time of burial ( 18 were found with coins that matched the date of the pottery: Butler Graves 55, 520; PN Graves 61.24, 63.2, and 63.5; HoB Grave O; PC Zone A Burial A; AhT Graves 67.15, 67.16, 67.18, 67.19, 67.26, $67.28,67.32,67.37,67.39,67.41$, and 68.9$)$. These range in date from the very early first century to the late second century. Grave 55 has an interesting combination of coins, a third- to second-century BC Sardis civic coin and a Julio-Claudian issue, also from Sardis. Rotroff and Oliver dated the pottery to the early first century AD; there was no earlier pottery in this grave. ${ }^{118}$ As can be suggested by the few Early Imperial contexts that we have, third- to first-century BC coins seem to be in circulation in the first century AD (see above); thus, the coin is not residual and appears to have been plucked from circulation to be placed into a grave two to three hundred years after its minting.

[^69]Apparently, incorporating a coin into the grave goods was an important part of the burial ritual for many, with care taken to select a proper reverse type. Eight graves contained a coin with a reverse of Zeus Lydios; five of these have a Senate obverse and were minted in 65 (RPC I: 3008). Perhaps significantly, they were found in a cemetery with other unidentifiable Julio-Claudian coins (AhT Graves 67.16, 67.23, 67.32, 67.35 , and 67.37 ), and this particular reverse was found in Butler Tumulus lalpha ${ }^{119}$ and the votive deposit in Field 49. Two of the burials contained the Augustan version of the reverse (PN Grave 67.4 and AhT Grave 67.19), and once the Hellenistic version of Zeus Lydios was placed in a grave (Butler Grave 61). Clearly, the local god of storms was thought to be efficacious in watching over the dead. ${ }^{120}$ It is hard not to see some special event that prompted the use of this particular reverse in the graves and a domestic votive deposit.

A generation later, it appears that the favored reverse is a temple: ten such graves from all over Sardis contain coins with this reverse (Butler Grave 520; AhT Graves 67.13, 67.15, 67.33, 67.39, and 68.9; PN Grave 61.24; HoB Grave O and HoB Grave 80.4; and the "Tomb of the Lintel"). ${ }^{121}$ The coins were minted between 1 and 120 AD, with the vast majority minted in the Flavian period. The widespread use of coins with the types of the Senate and a tetrastyle temple show that it was not just a single family with a predilection for the coin type.

It appears that the placing of a coin in the burial continued in the early Antonine period, ending abruptly with coins of Marcus Aurelius as Caesar (Butler Graves

[^70]S6, 423; HoB Grave 80.1; PN 63.2; cf. PC Zone A Burial A). The winged caduceus was a preferred reverse type, at least in Grave 423, where it appears on four coins (see also Butler Grave S6). Perhaps significantly, this was also the preferred type for the Antonine coins found associated with the Wadi B Temple. It appears that the custom of burying a body with a coin ended in the late second century at Sardis.

### 3.4.3 Late Roman Burials

Many examples of fourth-century and later tombs have been excavated, especially around Churches E and EA and on the Acropolis, ${ }^{122}$ yet very few of these burials included coins (Table 3.9). Two burials, PN 62W and PN 63.1, contained single coins; the former had no other grave goods. ${ }^{123}$ PN Grave 63.1 was a rich burial, comprising of more than one adult, and containing glass dating to the Late Roman period and a figurine dated to the third or fourth century. The excavator and Hanfmann rejected the coin as part of the grave gifts, but it dates to the end of the fourth century and was recorded to have been found near a skull; it could thus have been part of the assemblage. One grave held four coins, which make their inclusion somewhat more likely to be deliberate: PN Grave 67.1 (cf. PN Grave 67.5). Overall, the practice of placing coins in graves was not at all a common part of the burial ritual in the fourth and fifth centuries. ${ }^{124}$

Two tombs stand out as significantly different from this very conservative picture of the fourth and fifth centuries: the HoB Mausoleum, containing four cist graves, and the Peacock Tomb at PN. The area that was later overbuilt by the "House of Bronzes" was originally a cemetery, probably dating from the first century BC (?) to the early second century AD . The HoB Mausoleum (a small built tomb common in Sardis and elsewhere) was found under the House of Bronzes, and thus may have been part of the earlier

## 122 Hanfmann 1983, p. 204.

123 See also Late Roman coins included in later burials in Field 49; since this area was occupied in the Late Roman period, the coins must be residual in the graves.

124 Contrast a fourth-century cemetery in Nempont-SaintFirmin (France), where 35 of 83 burials included coins, four with more than one coin; some of the coins were ritually defaced. Although not rare, this is a high percentage of graves to include coins as grave gifts (Duchemin 2012, Table 1).
cemetery. It appears that the cemetery was not used in the third century, allowing the tombs and graves to fall into disrepair. The "House of Bronzes" was built over top of the Mausoleum after it was razed. ${ }^{125}$

The remains of the tomb show that it was tightly packed with four cist graves, all with their cover slabs still in place when excavated. Goods in several of the graves may show that the burials were made in the second century. However, third- through fifthcentury coins and Late Roman or Early Byzantine lamps are found in all the cists (one is missing a lamp); these show the later use, probably at the end of the fifth century. I will argue that it is at this time that the graves were reopened, (perhaps prior to a construction phase in HoB?), the coins were scattered in the cists, a lamp was placed in the cist, the cist was reclosed, and the tomb was dismantled; the living had allowed the dead to remain at ease in their graves.

I will begin with the cist found closest to the entrance (see Fig. 3.2). Grave 80.3 probably held multiple burials. It contained a coin of the late second or third century, which possibly belonged to the second-century phase of the use of the tomb. I would suggest that the bone inlay, glass bead and bronze ring also date to this phase, as these types of grave goods do not seem altogether typical for fifth-century graves. Among the fill were 81 coins from the second half of the third century to the early fifth century; these coins are typical of the fifth-century circulation hoards (including clipped coins) found in Sardis (see Fig. 3.5). The coins appear to have been scattered across the grave, not stored in a perishable container. The number of coins found in this cist is surprising, rivaling the hoards for size. Also placed in the cist at this time was a Late Roman lamp. ${ }^{126}$

Grave 80.2, which the excavator considered "relatively untouched," contained fragments of two individuals and an intact ceramic unguentarium dated to the Early Imperial period. Marcus Rautman confirmed the date of the unguentarium to the late first or early second century. Other rich objects were included in this burial-items more typical of a second-century burial than a fifth-century one.

[^71]Table 3.8 Imperial tomb groups containing coins (not listed are coins of uncertain date, due to illegible types, since they offer no insight into the chronological nor iconographical uses of the coin in the burial).

| Tomb No. | Mint: Type: Coin No. | Coin Terminus <br> Post Quem | Pottery Terminus <br> Post Quem |  |
| :--- | :--- | :--- | :--- | :--- |
| Butler 520 | Pergamum: Pergamum <br> crowns Sardis/Augustus in <br> temple | ca. 1 AD? | Lamps and pottery <br> dated from <br> Hellenistic to early <br> century AD | Bell 1916, no. 164; Rotroff and Oliver 2003, p. <br> 198 (coin slightly redated in both) |
| PN Grave <br> 63.5 | Sardis?: probably Augustus/ <br> illegible: C63.0181 | 14 AD |  |  |


| AhT Grave 67.13 | Sardis: Senate/hexastyle temple: C67.0841 | Late $1^{\text {st }}$-early $2^{\text {nd }}$ century AD | No other objects; cemetery terminus post quem is $1^{\text {stt}}$-early $22^{\text {nd }}$ century AD | Mitten, Final Field Report: AhT 1967, p. 14; Fieldbook AhT 67 IV: 120-21; coin redated |
| :---: | :---: | :---: | :---: | :---: |
| AhT Grave 67.33 | Probably Sardis: illegible/ hexastyle temple: C67.0777 | Late $1^{\text {st }}$-early $2^{\text {nd }}$ century AD | No other objects; cemetery terminus post quem is $1^{\text {st }}$-early $2^{\text {nd }}$ century AD | Mitten, Final Field Report: AhT 1967, p. 21; Fieldbook AhT 67 IV: 9 |
| PN Grave $61.24$ | Sardis: Senate/hexastyle temple: C61.0430 | Late $1^{\text {st }}$-early $2^{\text {nd }}$ century AD | Earrings dated $1^{\text {st }}-2^{\text {nd }}$ century AD | Beneath Peacock Tomb. Hansen, Final Field Report: PN 1961, p. 30; Fieldbook PN 61 III: 96; Hanfmann 1962, p. 32 (coin not mentioned) |
| HoB Grave O | 1. Sardis: Senate/tetrastyle temple: C59.0348 <br> 2. Sardis: Tyche/Kore: <br> C59.0401 <br> 3. Illegible: C60.0221 | 1. Flavian (reattributed) <br> 2. 200-220 AD <br> 3. $1^{\text {st }}-2^{\text {nd }}$ <br> century AD | $1^{\text {st }}-2^{\text {nd }}$ century AD | Fieldbook HoB 59 V: 24-26; Hanfmann 1960, p. 28 (grave reused, only mentioned one coin); note that fieldbook records the number of only one coin, but mentions 2 coins found in grave; coin envelopes list 3 coins found in grave |
| AhT Grave 67.39 | Nacrasa: Trajan/temple: C67.0056 | 98-117 AD | $\begin{aligned} & 1^{\text {st }} \text {-early } 2^{\text {nd }} \text { century } \\ & \text { AD } \end{aligned}$ | Mitten, Final Field Report: AhT 1967, p. 23; Fieldbook AhT 67 IV: 88-89 |
| Butler 423 | 1. Sardis: Sabina/Hermos <br> 2. Sardis: Aurelius/winged caduceus (4 coins) <br> 3. Uncertain number of illegible coins | 1. 117-138 AD <br> 2. $140-161 \mathrm{AD}$ <br> 3. Uncertain | No pottery terminus post quem suggested | Bell 1916, nos. 288, 293-296; Rotroff and Oliver 2003, p. 206 |
| PC Tomb D | 1. Sardis: Herakles/ Omphale: C60.0215 <br> 2. Uncertain: C60.0214 coins found "stuck together" | $1.90-100 \mathrm{AD}$ <br> 2. $1^{\text {st }}-2^{\text {nd }}$ century AD | Lamps dated Hellenistic to first half of $2^{\text {nd }}$ century AD | Del Chiaro, Final Report: PC 1960, p. 1; Fieldbook PC 60 II: 15-18; Hanfmann 1961 does not mention coins |
| AhT Grave 67.41 | Uncertain: C67.0834 coin worn smooth, countermarked with $\mathrm{YN}^{\star} \Gamma$, in crescent stamp, which AJ (M7, p. 73) dated to $1^{\text {st }}-2^{\text {nd }}$ century AD | $\begin{aligned} & 1^{\text {st }-2^{\text {nd }} \text { century }} \\ & \mathrm{AD} \end{aligned}$ | $1^{\text {st }}$-early $2^{\text {nd }}$ century AD | Mitten, Final Field Report: AhT 1967, p. 24; Fieldbook AhT 67 IV: 75 |
| Butler S6 | Sardis: Aurelius/winged caduceus | 140-161 AD | Pottery not given a terminus post quem | Bell 1916, no. 297; Rotroff and Oliver 2003, pp. 202-3 |
| HoB Grave 80.1 | Sardis: Dionysos/torch: $\text { M13 } 184.4$ | 140-161 AD | Late $1^{\text {st }}$ or early $2^{\text {nd }}$ century AD | Fieldbook HoB 80 II: 5, 10 |
| PN Grave $63.2$ | Sardis: Aurelius/inscription in wreath: C63.0148 | 140-161 AD | Pottery not given a terminus post quem | Robertson, Final Field Report: PN Graves 1963, p. 3, who rejected coin as part of burial; Fieldbook PN 63 III: 45; Hanfmann 1964, p. 23 accepted coin as part of grave goods |
| PC Zone A, Burial (Tomb) A | Uncertain: bust of emperor or empress/bust or Tyche, turreted: C60.0035 | $2^{\text {nd }}$ century AD | Lamp dated second half of $1^{\text {st }}-2^{\text {nd }}$ century AD | Fieldbook PC 60 I: 22; Hanfmann 1961, p. 18 |
| Tomb of the Lintel | 1. Sardis: Athena/tetrastyle temple (RPC II: 1305): <br> C59.0276 <br> 2. Illegible: C59.0277 iv | $\begin{aligned} & \text { 1. } 70-73 \mathrm{AD} \\ & \text { 2. } 2^{\text {nd }}-3^{\text {rd }} \\ & \text { century } \mathrm{AD} \text { ? } \end{aligned}$ | $\begin{aligned} & \text { Lamps dated } 2^{\text {nd }} \\ & \text { century BC-1 }{ }^{\text {st }} \\ & \text { century } \mathrm{AD} \end{aligned}$ | Hanfmann 1960, p. 18; Rotroff and Oliver 2003, pp. 13-14 |
| $i \quad$ Coin envelope reads "perhaps Tiberius?", then in Johnston's red pen, "or Augustus." Hanfmann (1964, p. 23) reported the coin as "perhaps Julio-Claudian." I prefer Johnston's identification. <br> ii I agree with Andrew Ramage's field reading; coin now illegible. <br> iii Johnston's red pen on the coin envelope noted the identification as "probably"; types not visible today. <br> iv Field notes cite the Hellenistic date of coins and the coin register records a date of third century AD for both; Johnston wrote " $2^{\text {nd }}-33^{r d "}$ on the envelope. The field reading did suggest the Athena/tetrastyle temple, and the EПI in the exergue confirms this reading for C59.0276. The field reading suggested a bust of Tyche for C59.0277; there might be some turrets on the edge and a galley stem on the reverse, possibly a coin of Phocaea? Johnston wrote " $1^{s t}-3^{r d}$ " on the envelope, then later crossed out " $1{ }^{s t}$." |  |  |  |  |

Table 3.9 Late Roman and Byzantine grave gifts of coins (for coin reverse types see App. 3).

| Tomb No. | Emperor or Reverse Type: Coin No. | Coin Terminus Post Quem | Pottery or Object Terminus Post Quem |
| :---: | :---: | :---: | :---: |
| PN Grave $67.1^{1}$ | 1. Constans: C67.0175 (M7 R 467) <br> 2. Constantius II: C67.0174 (M7 R 329) <br> 3. Illegible (2 coins) | $\begin{aligned} & \text { 1. } 341-346 \mathrm{AD} \\ & \text { 2. } 351-354 \mathrm{AD} \\ & \text { 3. Not stated, probably Late } \\ & \text { Roman } \end{aligned}$ | Late Roman lamps |
| PN Grave $67.5^{\mathrm{ii}}$ | 1. Probus: C67.0054 (M7 R 103) <br> 2. Virtus Exerciti 2: C67.0779 (M7 R 1059) <br> 3. Gloria Romanorum 21: C67.0780 (M7 R 923) <br> 4. Uncertain (3 coins) | $\begin{aligned} & \text { 1.276-282 AD } \\ & \text { 2. 395-408 AD } \\ & \text { 3. 402-408 AD } \\ & \text { 4.Hellenistic (field reading; } \\ & \text { residual?) } \end{aligned}$ | No other objects |
| Нов Mausoleum Grave $80.2^{\text {iii }}$ | 1. Pergamum: Asklepios/staff: M13 25.9 <br> 2. Claudius II (2 coins): M13 290.2, 294.5 <br> 3. Uncertain: Iovi Conservatori: M13 387.4 <br> 4. Uncertain: barbarous radiate (2 coins): M13 297.4, 300.2 <br> 5. VNMR: M13 423.12 <br> 6. Fel Temp Reparatio FH3: M13 557.14 <br> 7. Illegible: M13 1001.45 <br> 8. Arcadius: M13 809.6 <br> 9. Salus Reipublicae: M13 869.5 <br> 10. Gloria Romanorum 3 emperors: M13 940.25 <br> 11. Cross in Wreath: M13 963.111 <br> 12. Illegible ( 2 coins): M13 1003.192, 1003.193 | $\begin{aligned} & \text { 1. 133-27 BC } \\ & \text { 2.270 AD } \\ & \text { 3.250-325 AD } \\ & \text { 4. After } 270 \mathrm{AD} \\ & \text { 5. } 341-346 \mathrm{AD} \\ & \text { 6. } 346-361 \mathrm{AD} \\ & 7.4^{\text {th }} \text { century } \mathrm{AD} \\ & 8.383-408 \mathrm{AD} \\ & 9.388-395 \mathrm{AD} \\ & 10.406-408 \mathrm{AD} \\ & 11.425-435 \mathrm{AD} \\ & 12.5^{\text {th }} \text { century } \mathrm{AD} \end{aligned}$ | Late Roman bottle, fragment of Late Roman/Early Byzantine lamp with stamped cross relief |
| HoB <br> Mausoleum <br> Grave 80.4 ${ }^{\text {iv }}$ | 1. Sardis: Apollo/club: M13 55.25 <br> 2. Sardis: Athena/tetrastyle temple: M13 $\mathbf{1 6 3 . 2}$ <br> 3. Uncertain follis (2 coins): M13 387.1, 387.2 <br> 4. Vot Mult: M13 503.3 <br> 5. Fel Temp Reparatio FH (3 coins): M13 530.2, 557.15, 559.24 <br> 6. Salus Reipublicae ( 2 coins): M13 770.1, 800.13 <br> 7. Virtus Exerciti 2: M13 876.2 <br> 8. Gloria Romanorum 3 emperors: M13 940.36 <br> 9. Cross in Wreath: M13 963.65 <br> 10. Illegible: M13 1003.198 | 1. $2^{\text {nd }}-1^{\text {st }}$ century BC <br> 2. $70-73 \mathrm{AD}$ <br> 3. $3^{\text {rd }}-$ early $4^{\text {th }}$ century AD <br> 4. 347-348 AD <br> 5. 346-361 AD <br> 6. 388-392 AD <br> 7. 395-401 AD <br> 8. 406-408 AD <br> 9. $425-435 \mathrm{AD}$ <br> $10.5^{\text {th }}$ century AD | No datable objects |
| HoB Mausoleum Grave 80.3v | 1. Attalea: Dionysos/Pan: M13 135.1 <br> 2. Rome: Gallienus/Provi Aug: M13 251.1 <br> 3. Rome: Constantine I/Soli Invicto Comiti: M13 370.2 <br> 4. Gloria Exercitus 2 standards (2 coins): M13 471.1, 489.1 <br> 5. Gloria Exercitus 1 standard (6 coins): M13 458.1, 491.2, 511.2, 513.2, 583.1, 597.19 <br> 6. VNMR ( 6 coins): M13 413.1, 415.1, 418.5, 418.6, 423.1, 423.5 <br> 7. Ivst Ven Mem: M13 417.1 <br> 8. Victoriae dd Auggq nn (3 coins): M13 495.1, 495.2, 495.3 <br> 9. Vot Mult (23 coins): M13 475.3-5, 479.2, 484.5, 486.3, 488.5, 488.10, 488.11, 488.17, 500.1, 503.1, 503.4, 506.2, 507.1, 580.1, $587.1,589.3,595.6,595.12,595.16,595.24,595.28$ <br> 10. Fel Temp Reparatio emperor and captives: M13 538.1 <br> 11. Fel Temp Reparatio FH ( 5 coins): M13 525.1, 540.1, 556.1, 557.25, 604.5 <br> 12. Spes Reipublice ( 2 coins): M13 537.1, 545.6 <br> 13. Securitas Reipublicae: M13 637.5 <br> 14. Gloria Romanorum 8 (2 coins): M13 616.1, 680.6 <br> 15. Salus Reipublicae ( 3 coins): M13 703.2, 750.6, 886.23 <br> 16. Virtus Exerciti 2 ( 5 coins): M13 778.1, 803.13, 885.13, 885.48, 885.81 <br> 17. Illegible (8 coins): M13 606.16, 1001.46-52 <br> 18. Concordia Augg Cp Victoriola: M13 939.12 <br> 19. Concordia Auggg cross: M13 944.4 <br> 20. Gloria Romanorum 3 emperors (2 coins): M13 915.4, 940.21 | 1. $180-300 \mathrm{AD}$ 2. $260-268 \mathrm{AD}$ $3.314-315 \mathrm{AD}$ $4.330-335 \mathrm{AD}$ $5.336-340 \mathrm{AD}$ 6.341-346 AD $7.342-347 \mathrm{AD}$ $8.347-361 \mathrm{AD}$ $9.347-348 \mathrm{AD}$ $10.348-350 \mathrm{AD}$ $11.346-361 \mathrm{AD}$ 12.355-361 AD $13.364-375 \mathrm{AD}$ $14.364-388 \mathrm{AD}$ $15.383-395 \mathrm{AD}$ $16.395-408 \mathrm{AD}$ 17. $4^{\text {th }}$ century AD 18. $401-403 \mathrm{AD}$ 19. $404-406 \mathrm{AD}$ 20. $406-408 \mathrm{AD}$ | Late Roman/Early Byzantine lamp |


|  | 21. Gloria Romanorum 2 emperors ( 2 coins): M13 843.1, 859.2 <br> 22. Victoria Augg: M13 946.7 <br> 23. Marcian monogram: M13 969.55 <br> 24. Illegible ( 3 coins): M13 1003.194, 1003.195, 1003.196 | 21. 408-423 AD <br> 22. $425-435 \mathrm{AD}$ <br> 23. 450-457 AD <br> 24. $5^{\text {th }}$ century AD |  |
| :---: | :---: | :---: | :---: |
| HoB Mausoleum Grave $80.5^{\text {vi }}$ | 1. Lion standing 1.: M13 984.23 <br> 2. Illegible: M13 1003.197 | $\begin{aligned} & \text { 1. } 457-474 \mathrm{AD} \\ & \text { 2. } 5^{\mathrm{h}} \text { century AD } \end{aligned}$ | Early Byzantine lamp |
| PN Tomb 61.14, Peacock Tomb ${ }^{\text {vii }}$ | 16 or "some 20" coins, of which 5 are identified in the record <br> 1. Salus Reipublicae: C61.0344 <br> 2. Gloria Romanorum, 2 or 3 emperors: C61.0345 <br> 3. Anastasius I pentanummium: C61.0166 <br> 4. Phocas half-follis: C61.0164 <br> 5. Constans II: C61.0165 <br> 6. Illegible or disintegrated, uncertain number | $\begin{aligned} & \text { 1. } 393-395 \mathrm{AD} \\ & \text { 2. } 402-423 \mathrm{AD} \\ & \text { 3. 498-518 AD } \\ & \text { 4. 605-606 AD } \\ & \text { 5. 653-654 AD } \end{aligned}$ | Final report suggested $5^{\text {th }}$-century date for tomb, by coin finds; Hanfmann's date due to stylistic parallels to paintings in $4^{\text {th }}$ century AD |
| i Fieldbook PN 67 I: 53; Ramage, Final Field Report: PN 1967, Appendix, p. 1. |  |  |  |
| ii Fieldbook PN 67 V: 10; Ramage, Final Field Report: PN 1967, Appendix, p. 2 added coin of Probus and three Hellenistic; Hanfmann, Mitten, and Ramage 1968, p. 11 called the grave fourth or fifth century. |  |  |  |
| iii Referred to as Grave 2 in fieldnotes. Fieldbook HoB 80 II: 57ff; Mitten, Final Field Report: HoB 1980, pp. 9, 23, 25; Greenewalt et al. 1983, p. 19. |  |  |  |
| iv Referred to as Grave 3 in fieldnotes. Fieldbook HoB 80 II: 77ff; Mitten, Final Field Report: HoB 1980, pp. 10, 25. |  |  |  |
| $v$ Referred to as Grave 1 in fieldnotes. Fieldbook HoB 80 II: 67ff; Mitten, Final Field Report: HoB 1980, pp. 9-10, 25. |  |  |  |
| vi Referred to as Grave 4 in fieldnotes. Fieldbook HoB 80 II: 92ff; Mitten, Final Field Report: HoB 1980, pp. 10, 25; Green p. 19. |  |  |  |
| vii Fieldbook PN 61 I: 88ff; Hansen, Final Field Report: PN 1961, p. 30; Hanfmann 1962, pp. 32-33 (coins not detailed). |  |  |  |

Along with the finds was a Hellenistic coin. This coin could have been residual even during the secondcentury AD burial phase, but it is not impossible that it was still in circulation, and it was chosen for its appropriate imagery of Asklepios (no. 25.9). During the fifth century, 14 more coins were introduced into the cist, the latest datable the Cross in Wreath reverse type (425-435). The deposit again looks very much like the fifth-century hoards found in Sardis, with a mixture of fourth- and fifth-century coins. Probably also associated with the burials were a coin of Licinius II (no. 362.1) and an uncertain fourthto fifth-century coin (no. 1002.81), although they were not recorded as found specifically in a grave. A Late Roman lamp was included in this cist. ${ }^{127}$

The cist with the fewest number of goods in it was Grave 80.5. No early coins came from the grave. Only two fifth-century coins were found in the cist, the latest datable to 457-474, which may date the renovation. Three Late Roman lamps accompanied the coins.

Finally, Grave 80.4 had a Hellenistic coin and a coin from the second half of the first century AD , the latter with the preferred reverse (of that time) of a temple. In the fifth century, 12 coins were introduced. They range from the late third to the fifth century,
ending with the Cross in Wreath reverse (425-435). Only a fragment of a lamp was recorded from this cist.

The HoB Mausoleum may have seen two phases of use before it was abandoned. The original burials may have belonged to the first or early second century AD, when coins were deposited in the graves (see Grave 80.4); other goods may have been retrieved when the grave was reused, but the coins escaped notice. It is possible that the Hellenistic/Early Imperial coins in 80.4 and 80.2 were residual, as the area was outside the city wall and could have been used as a dump (possibly even a cemetery) in the second or first century BC; there is evidence for an earlier dump here.

The cists were re-entered in the third quarter of the fifth century. Two different scenarios could explain the coins in the graves in the HoB Mausoleum. One possibility is that the derelict cemetery was discovered when the "House of Bronzes" started being built. The builders could have reused the tomb for their own fifth-century burials, perhaps as their "family" mausoleum. The old burials were pushed aside and new bodies put in, and coins were scattered across the bodies (in a fashion that is, admittedly, unusual in the fifth century; it is possible, though unlikely, that the scatter could be due to the intrusion of water into

[^72]the cist graves). ${ }^{128}$ On the other hand, it is possible that the tomb was rediscovered in the fifth century as houses were rebuilt and expanded in this area; the discoverers venerated it as family monument. As the area was reconfigured for living quarters, the builders may have piously included coins and lamps as votive deposits to the newly-disturbed dead. Hanfmann noted that a smaller, painted tomb at the House of Bronzes was built in the fourth century, and "was carefully preserved under a Christian residence of the sixth century," possibly because the house builders perceived the tomb as a Christian tomb. ${ }^{129}$ It is possible that we have a similar scenario with the HoB Mausoleum. Nevertheless, once the graves were resealed in the third quarter of the fifth century, they were left alone, and probably forgotten by the end of the century.

The Peacock Tomb in PN was excavated in 1961. The area was used as a cemetery from about 350 to the close of the fourteenth century, in and around the churches built in this sector. ${ }^{130}$ The painted chamber tomb was built over first- or second-century graves, and the painting style is reminiscent of other fourthcentury tombs in Sardis. ${ }^{131}$ "Some 20 coins" noted by the excavator were ultimately reduced to five legible entries (I assume; an unrecorded number disintegrated). The excavator, Donald Hansen, described the coins as being found in the northwest corner of the tomb, along with a "tiny ring?" and earring. The primary burial was identified as a male, and it was found in the center of the tomb. Hanfmann associated the earliest coin in the group with the primary burial, at the end of the fourth century; the excavator preferred a date for the group in the fifth century, due to the presence of one coin dated to the first quarter of the fifth century. Yet one coin from the group dated to the early sixth century, one to the early seventh, and one to the mid-seventh century.

[^73]Clearly the group was not part of a grave gift in the fourth century, even if the inhumation dates to that period. It is likely, given the placement in the corner of the tomb, that the coins were contained in a bag or other perishable container. Foss suggested that the tomb was repeatedly visited, and visitors dropped votive coins, "for centuries." ${ }^{132}$ The placement of one coin about every 50 years for a period of 150 years seems a little odd; this practice would also not explain the earring. Given the type of deposits that date to the mid-seventh century (see Section 3.6), it is much more likely that the bag of coins came from the mid-seventh century, as the family "cleaned up" a tomb constructed in the fourth century for reuse in the seventh century. If the painted decorations were perceived as belonging to a Christian tomb, we may even be able to see this as an offering to the perceived saintly original occupant.

### 3.5 Late Roman Contexts:

## The Fourth and Fifth Centuries ${ }^{133}$

The major areas of excavation of Late Roman material in Sardis include the area of the Synagogue ${ }^{134}$ and Byzantine Shops; MMS, MMS/S, and MMS/N (houses, colonnaded street); and Field 49 (houses). However, almost any square in Sardis would yield Late Roman remains, from the villas that appear alongside the Pactolus, to cemeteries that lined the roads into Sardis (the latest uncovered in 2012). I will focus on the Late Roman deposits of MMS. ${ }^{135}$

The problem with identifying Late Roman contexts is that the pottery from this period is often dated in full centuries, not generations, and there is an overall lack of closely-dated fine wares in primary contexts to use as a benchmark. Hence, the coins date the deposits; the pottery expert uses the closing date of the deposit to narrow down the typology of the pottery in order

## 132 Foss 1976, p. 47.

133 In keeping with numismatic terminology, I will refer to the fourth and fifth centuries as Late Roman, not Early Byzantine, which is the preferred label for pottery specialists. For a fuller description of the reverse types, see App. 3.

134 Andrew Seager is preparing the final publication of the Synagogue; I am writing the section on the coin finds.

135 Marcus Rautman presented me with these contexts, and I thank him for his collaboration, but it should be stressed that the pottery from these deposits is still under study as Rautman prepares the final publication of the houses of Sardis.
to find fourth-, fifth-, or sixth-century forms. What can be noted by isolating the following contexts is to show the coins that were in circulation at the same time, and to reinforce the point that the latest coin only gives a terminus post quem to the deposit.

However, the problem of residual coins and the length of circulation is especially acute in the Late Roman period, as many small copper-alloy coins are found in the Late Roman strata of any city. I have adapted a formula used for finding the Mean Ceramic Date (MCD) of historical pottery to try to find a profile of a fourth-, early, middle, or late fifth-century deposit (see App. 4).

### 3.5.1 Fourth-Century Contexts

Deposit 1 (Table 3.10a) ${ }^{136}$
The terminus post quem from the coins is the middle of the fourth century. The stratum was dated to the mid- to late fourth century due to pottery and coins. ${ }^{137}$ The presence of a late third-century coin in this deposit is not surprising in a fourth-century context. Three of the four deposits contained coins of the late third century, as did several fifth-century deposits, including HoB Graves 80.2, 80.3, and 80.4, and PN Grave 67.5, and one hoard closed in the fifth century (H8, see below). It appears that late thirdcentury coins were part of the circulation pool in the fourth century and into the fifth century.

## Deposit 2 (Table 3.10b) ${ }^{138}$

The absence of first half of the fourth-century coins is interesting, but not disturbing, given the few coins that were found in this deposit. The use of third-century coins in fourth-century contexts has already been noted above; the size and weight of this coin ( 15 mm , 1.6 g ) would allow it to circulate comfortably in the fourth century.

[^74]
## Deposit 3 (Table 3.10c) ${ }^{139}$

Rautman dated these Lots to mid- to late fourth century by the pottery; the coins show a mixture of dates, with one late fourth-century issue. ${ }^{140}$ The Hellenistic issues could be residual, as residual Hellenistic pottery appeared in other deposits in MMS. ${ }^{141}$ The third-century coins are more likely to reflect fourth-century circulation, especially given their size. The terminus post quem from the coins is the very end of the fourth century, but this terminus is reflected in one coin, which is at least 30 years older than the next two coins in the deposit.

## Deposit 4 (Table 3.10d) ${ }^{142}$

One coin (no. 230.24, first to third century) was rejected as residual, since it was 25 mm and 7.82 g . Although the Imperial layers have not been isolated in $\mathrm{MMS} / \mathrm{N}$, the area was likely occupied in the Imperial period, since it was within the city limits. ${ }^{143}$ The Roman Provincial coins from this occupation may have been reintegrated into the strata in the building activities in the fourth century; yet two of them could have circulated into the fourth century, since their module is close to fourth-century coins. Rautman noted the fourth-century context of the imported pottery and used the deposit to help clarify the picture of locally-produced fourth-century pottery. ${ }^{144} \mathrm{He}$ has more recently suggested that "the pottery runs through the mid/late fourth century, with little or any that must date after $400 .{ }^{1145}$ If the resulting group of coins reflects the normal circulation pattern of fourthcentury coins, the result is a heavy reliance on coins of the end of the third century. There are fewer coins of the first half of the fourth century surviving, with a rise in numbers of issues of Valentinian I, Valens, Valentinian II, and Theodosius I that are reflected in the overall numbers of fourth-century coins in Sardis. However, we would expect more coins, especially

139 Rautman 1995b, p. 56.
140 Rautman, Roman Pottery Final Report 2011, pp. 1, 5.
141 Rautman, Roman Pottery Final Report 2011, p. 7.
142 Greenewalt, Ratté, and Rautman 1995, pp. 3-7.
143 Cahill, pers. comm.
144 Greenewalt, Ratté, and Rautman 1995, p. 7.
145 Rautman, pers. comm.

Table 3.10a $4^{\text {th }} \mathrm{c}$. Deposit 1: Room 7 of the Late Roman Townhouse, packing beneath sloping tile floor (MMS-II 93.1 Lots 13, 14 and MMS-II 96.1 Lots 18, 22), 7 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Claudius II, posthumous | 270 AD and later | 294.1 |
| Licinius I | $318-320 \mathrm{AD}$ | 348.1 |
| Constantine II | 320 AD | $\mathbf{3 8 4 . 1}$ |
| Licinius II | $321-324 \mathrm{AD}$ | 360.3 |
| Constantius II | $337-348 \mathrm{AD}$ | $474.1,488.14$ |
| Fel Temp Reparatio phoenix globe | $348-351 \mathrm{AD}$ | 594.1 |

Table 3.10b $4^{\text {th }}$ c. Deposit 2: Room 6 of the Late Roman Townhouse, under tile floor (MMS-I 82.B Lots 22, 29; MMS-I 85.1 Lot 18), 6 coins.

| Issuer or Issue | ( Date | Catalogue No. |
| :--- | :--- | :--- |
| Sardis | $212-217 \mathrm{AD}$ | 193.1 |
| Constantius II | $348-361 \mathrm{AD}$ | $533.4,533.5,559.6$ |
| Gloria Romanorum 8 | $364-388 \mathrm{AD}$ | 680.2 |
| Illegible | $4^{\text {th }}$ century AD | 1001.71 |

Table 3.10c $4^{\text {th }}$ c. Deposit 3: Room (Corridor) 4 of the Late Roman Townhouse (MMS-I 90.1 Lots 104, 113, 114, 115), 6 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Alexander III and successors | $336-227 \mathrm{BC}$ | 14.1 |
| Seleucus II | $246-241 \mathrm{BC}$ | 80.3 |
| Philip II | $244-249 \mathrm{AD}$ | $\mathbf{2 1 0 . 1}$ |
| Gallienus | $260-268 \mathrm{AD}$ | 248.1 |
| Licinius I | $321-324 \mathrm{AD}$ | 351.6 |
| House of Constantine | $324-361 \mathrm{AD}$ | $606.2,3$ |
| Virtus Exerciti 2 | $395-401 \mathrm{AD}$ | 885.5 |

those dating after 341, as the overall numbers from Sardis show a substantial number of recovered coins from this period (Fig. 2.4). The terminus post quem for the coins is the end of the fourth century, although the terminus is defined by only two coins.

Since three of the four deposits outlined here have fewer than 11 coins in them, conclusions about fourthcentury deposits must be made with caution. The coin termini post quem for the deposits ranges from not very reflective of the pottery termini to closely aligned. Perhaps the size of the sample in Deposit 4 (drainlatrine context in MMS/N) allows us to have some confidence that the coin terminus and the pottery terminus should be closely aligned in fourth-century deposits. All of the deposits include third-century coins, which can now be seen as part of the body of circulating coin in the fourth century. It is also interesting that the largest deposit contains a substantial number of coins
from the first half of the fourth century, even though the deposit was closed by the end of the century. It thus appears unlikely that there was a substantial, or thorough, recall of early fourth-century coins as the module decreased (see above, Section 2.5.1).

A calculation of the Mean Coin Date for Deposit 4 (the only one with enough coins for a reasonable calculation) is suggestive of the broad range of coins that are still being used as legal tender-that is, are indigenous to the deposits. The calculation provided an MCD of 332 , with $49 \%$ of the coins in the deposit falling before that date. ${ }^{146}$ The deposits do not appear to tail off as hoards do, with coins from within the 25 years of the date of closure of the deposit being abundant and the 25 years prior normally of the same level (admittedly,

[^75]Table 3.10d $\quad 4^{\text {th }} \mathrm{c}$. Deposit 4: Closure of drain and latrine complex under the lower mosaic of the south portico of MMS/N plaza (MMS/N 90.1 Lots 46-48, 51 and MMS/N 91.1 Lots 59, 72, unlotted), 37 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Roman Provincial | $2^{\text {nd }}$ century AD | $137.1(19 \mathrm{~mm}, 4.40 \mathrm{~g})$ |
| Antoninianus or follis | $3^{\text {rd }}$ or early 4 ${ }^{\text {th }}$ century AD | $387.11(21 \mathrm{~mm}, 4.71 \mathrm{~g})$ |
| Claudius II Gothicus, barbarous radiate | $270-300 \mathrm{AD}$ | 297.5 |
| Galerius Maximian | $293-305 \mathrm{AD}$ | $335.1,339.1$ |
| Diocletian | $295-296 \mathrm{AD}$ | $327.2,327.4$ |
| Maximian Herculius | $295-299 \mathrm{AD}$ | 331.3 |
| Constantius Chlorus | $295-296 \mathrm{AD}$ | 340.2 |
| Crispus | $317-326 \mathrm{AD}$ | 383.1 |
| Constantine I | $317-320 \mathrm{AD}$ | 375.1 |
| Licinius I | $318-324 \mathrm{AD}$ | $347.1,349.1,349.3,353.4$ |
| Constantine I | $306-320 \mathrm{AD}$ | $368.1,374.1,379.1$ |
| Constantine I, posthumous | $337-346 \mathrm{AD}$ | $414.2,422.1$ |
| Constantine II | $337-340 \mathrm{AD}$ | 454.2 |
| Constans | $337-340 \mathrm{AD}$ | $498.1,511.1$ |
| Constantius II | $347-361 \mathrm{AD}$ | $488.13,560.16,560.42$ |
| Julian II | $355-361 \mathrm{AD}$ | 570.2 |
| Securitas Reipublicae | $364-375 \mathrm{AD}$ | $676.1,684.32,684.77$ |
| Gloria Romanorum 8 | $364-388 \mathrm{AD}$ | 680.7 |
| Theodosius I | $378-395 \mathrm{AD}$ | 753.1 |
| Illegible | $4^{\text {th }}$ century AD | 1001.132 |
| Illegible | $4^{\text {th }}$ or $5^{\text {th }}$ century AD | $1002.212,1002.396,1002.397,1002.433$ |

the graph shows only fifth-century hoards, since there are no fourth-century hoards from the modern excavations in Sardis). In hoards, the earlier issues show a substantial drop-off commensurate with their age, a result different from the deposits noted here. ${ }^{147}$ Instead, the numbers show a small group of coins comes from the latest phase of the deposit. Some deposits only show their age with one coin or even no coins that coincide with the pottery terminus. Almost all of the deposits appear to show a heavy reliance on issues dating 20,30, or 50 years earlier than the latest-dated coin.

### 3.5.2 Fifth-Century Contexts

I will begin by looking at deposits found under the lower mosaics of the south portico of MMS/N Road and Plaza; this is the mosaic with inscription noting the prefecture of Flavius Archelaus. I stress that this list does not necessarily date the mosaics, but only discusses

[^76]the coins found under the mosaics and attempts to find a normal profile for the fifth-century strata. ${ }^{148}$

## Deposit 1 (Table 3.11a) ${ }^{149}$

It appears that there are three coins (Marcian, no. 967.2; and Leo I, nos. 973.2 and 986.10) that are intrusive in this context, as the mortar did not entirely seal the layer, but stopped short of the back of the stylobate. ${ }^{150}$ The coins may have worked their way into this crack from the bedding of the upper mosaic of the south portico of the MMS/N Plaza (see Table

[^77]150 Fieldbook MMS/N 91.1 I: 129-33.

Table 3.11a $5^{\text {th }} \mathrm{c}$. Deposit 1: Bedding of the lower mosaic of the south portico of MMS/N plaza (MMS/N 78.1, not lotted; MMS/N 79.1, not lotted; MMS/N 90.1, Lots 13, 45; MMS/N 91.1 (Lots 13, 45, 71), 58 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Illegible | $1^{\text {st }}$ to $3^{\text {rd }}$ century AD | 230.22 |
| Illegible | $3^{\text {rd }}$ century AD | 387.24 |
| Gallienus | $253-260 \mathrm{AD}$ | 242.1 |
| Claudius II Gothicus, posthumous | 270 AD and later | 292.1 |
| Diocletian | $295-296 \mathrm{AD}$ | 327.1 |
| Maximian Herculius | $295-298 \mathrm{AD}$ | 331.4 |
| Galerius Maximian | $302-303 \mathrm{AD}$ | 334.1 |
| Licinius I | $313-324 \mathrm{AD}$ | $350.3,351.4$ |
| Crispus | $317-320 \mathrm{AD}$ | 382.1 |
| Licinius II | $321-324 \mathrm{AD}$ | $353.1,5,361.2$ |
| Constantine I | $327-335 \mathrm{AD}$ | $395.1,398.3$ |
| Urbs Roma | $330-336 \mathrm{AD}$ | 431.1 |
| Constans | $337-340 \mathrm{AD}$ | 505.1 |
| Constantine I, posthumous | $341-346 \mathrm{AD}$ | $421.4,422.2,423.4$ |
| Constantius II | $330-348 \mathrm{AD}$ | $480.1,483.2,484.2,484.3,486.1,487.1,488.1,488.7,488.8,524.1,530.1$, |
| Julian II | $355-361 \mathrm{AD}$ | 569.1 |
| House of Constantine | $324-361 \mathrm{AD}$ | $595.29,606.42$ |
| Valentinian I | $364-367 \mathrm{AD}$ | 610.1 |
| Securitas Reipublicae | $364-383 \mathrm{AD}$ | $679.7,684.48,684.73$ |
| Victory l. | $364-435 \mathrm{AD}$ | 887.34 |
| Theodosius I | $378-383 \mathrm{AD}$ | 733.1 |
| Vot Mult | 383 AD | 825.4 |
| Honorius, Arcadius | $395-401 \mathrm{AD}$ | $772.1,792.6,796.7,832.3,836.9,851.1,855.5,855.6,885.9,885.47$ |
| Theodosius II, Eudoxia | $401-408 \mathrm{AD}$ | $811.1,913.2,915.3$ |
| Gloria Romanorum 3 emperors | $400-408 \mathrm{AD}$ | 940.9 |
| Gloria Romanorum 2 emperors | $408-423 \mathrm{AD}$ | 942.19 |
| Illegible | $4^{\text {th }}$ or $5^{\text {th }}$ century AD | $1001.140,1002.278,1002.451,1002.452,1002.453,1003.1305$ |
|  |  |  |

3.12b). The mosaic was dated in preliminary reports to the second half of the fourth or beginning of the fifth century, due to the coin evidence. ${ }^{151}$ Only one coin in the deposit extends this terminus to ca. 425, a pattern we will find repeated in other fifth-century deposits. Also fairly typically, the number of fourthcentury coins is approximately equal to the number of fifth-century coins; the deposit also includes coins that predate the 354 reform, as well as coins of the

151 Greenewalt, Ratté, and Rautman 1995, p. 7; Greenewalt 1991, p. 458.
late third century. The period between 364 and 388 is something of an anomaly here, as the number of coins from this period is less than previous and later periods.

## Deposit 2 (Table 3.11b) ${ }^{152}$

It is possible that so many coins were in this installation due to its function as a water basin, with water piped in. Note that the presence of mortar greatly magnified

[^78]Table 3.11b $\quad 5^{\text {th }} \mathrm{c}$. Deposit 2: Late Roman Townhouse, Room 10 hydraulic feature (MMS-I 85.1 Lots 51 and 57 ), 97 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Securitas Reipublicae | $364-367 \mathrm{AD}$ | 684.84 |
| Victory l. | $364-435 \mathrm{AD}$ | 887.36 |
| Theodosius I or II | $379-450 \mathrm{AD}$ | 927.10 |
| Salus Reipublicae | $383-395 \mathrm{AD}$ | 886.137 |
| Arcadius, Honorius | $395-401 \mathrm{AD}$ | $870.9,885.76$ |
| Cross in Wreath | $425-435 \mathrm{AD}$ | $922.7,963.44,963.182$ |
| Marcian | $450-457 \mathrm{AD}$ | $969.61,969.81,969.90$ |
| Leo I | $457-474 \mathrm{AD}$ | $977.3,984.11,984.30,985.27,985.39,988.1,987.50,987.51$ |
| Zeno | $476-491 \mathrm{AD}$ | $995.14,997.65,997.69$ |
| Uncertain monogram | $450-498 \mathrm{AD}$ | $999.35,999.47,999.76,999.93,999.123,999.137,999.181,999.229,999.259$ |
| Illegible | $4^{\text {th }}$ century AD | $1001.72,1001.73$ |
| Illegible | $4^{\text {th }}$ or $5^{\text {th }}$ century AD | $1002.131-148$ |
| Illegible | $5^{\text {th }}$ century AD | $1003.385-428,1003.440$ |

Table 3.11c $5^{\text {th }} \mathrm{c}$. Deposit 3: Late Roman Townhouse, Room 3, sealed beneath tile floor (MMS-I 85.1 Lot 82, with MMS-I 83 Basket 49, not lotted), 37 coins.

| Issuer or Issue | Date |  |
| :--- | :--- | :--- |
| Julian II | $355-361 \mathrm{AD}$ | 575.4 |
| Victory 1. | $364-435 \mathrm{AD}$ | 887.30 |
| Cross in Wreath | $425-435 \mathrm{AD}$ | 963.93 |
| Leo I | $457-474 \mathrm{AD}$ | 975.8 |
| Illegible | $4^{\text {th }}$ century AD | 1001.75 |
| Illegible | $4^{\text {th }}$ or $5^{\text {th }}$ century AD | 1002.152 |
| Illegible | $5^{\text {th }}$ century AD | $1003.432,1003.438$ |
| Hoard 6,29 coins | Latest identifiable: $457-474 \mathrm{AD}$ | Evans 2013b |

the corrosion of these coins, making a high percentage illegible (two disintegrated in cleaning). The terminus post quem from the coins is the end of the fifth century. The deposit lacks coins of the first half of the fourth century. However, there are coins of the later fourth century present in the deposit.

## Deposit 3 (Table 3.11c) ${ }^{153}$

The datable coins in both the matrix and the hoard range from the middle of the fourth to the third quarter of the fifth century, a wide range for a small sample. The terminus post quem from the coins is the end of the fifth century, a date obtained by both the coins in the matrix and in the hoard.

153 Rautman 1995b, p. 61; Greenewalt, Rautman, and Cahill 1998, p. 61.

Deposit 4 (Table 3.11d) ${ }^{154}$
This small deposit is compact, with datable coins only from the fifth century (one residual coin from the first or second century was discarded, no. 230.80); the end of the fifth century is thus the terminus post quem.

Deposit 5 (Table 3.11e) ${ }^{155}$
Coins from the first half of the fourth century are missing, as is seen in other deposits. Although the terminus post quem for the coins is the very end of the fifth century, more coins in the deposit can be dated to the third quarter than to the last quarter of the century; only two coins give the terminus.

154 Greenewalt, Ratté, and Rautman 1995, p. 7.
155 Rautman 1995b, p. 59.

Table 3.11d $5^{\text {th }} \mathrm{c}$. Deposit 4: House west of the Late Roman Townhouse, floor (MMS-III 93.1 Lot 5), 7 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Marcian | $450-457 \mathrm{AD}$ | 969.53 |
| Anastasius I | $491-498 \mathrm{AD}$ | 1004.146 |
| Uncertain monogram | $450-498 \mathrm{AD}$ | 999.290 |
| Imitation | $5^{\text {th }}$ century AD | 1115.1 |
| Illegible | $4^{\text {th }}$ or $5^{\text {th }}$ century AD | $1002.259,1002.261$ |
| Illegible | $5^{\text {th }}$ century AD | 1003.903 |

Table 3.11e $5^{\text {th }}$ c. Deposit 5: Late Roman Townhouse, Room 23, packing for floor (MMS-II 91.1 Lot 159), 34 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Constantius II | $355-361 \mathrm{AD}$ | 560.53 |
| Theodosius I | $383-395 \mathrm{AD}$ | 738.2 |
| Arcadius | $383-408 \mathrm{AD}$ | 809.11 |
| Cross in Wreath | $425-435 \mathrm{AD}$ | $963.188,189$ |
| Marcian | $450-457 \mathrm{AD}$ | 969.20 |
| Leo I | $457-474 \mathrm{AD}$ | 987.32 |
| Anastasius I | $491-498 \mathrm{AD}$ | 1004.47 |
| Uncertain monogram | $450-498 \mathrm{AD}$ | $999.213,999.253$ |
| Illegible | $4^{\text {th }}$ or $5^{\text {th }}$ century AD | $1002.216,1002.217$ |
| Illegible | $5^{\text {th }}$ century AD | $1003.582-603$ |

## Deposit 6 (Table 3.11f) ${ }^{156}$

The late third-century coin may be a residual coin as well, as there was activity in tombs in this area at this time, yet third-century coins appear to be part of the circulation pool in the fifth century, as noted above. There is a gap in the coins until the middle of the fourth century, not an uncommon pattern for the fifth century. Only a few coins date the terminus post quem of the mosaic to 425-450, but this can be seen as an expected coin behavior, as in several of the deposits listed above. More coins date to the last quarter of the fourth century than the quarter century of the terminus post quem. The deposit has a peak in the first quarter of the fifth century.

The coins look like an intentional scatter: that is, there are more coins per square meter than are found in other fills, suggesting that the coins were intentionally introduced into the bedding. Thus,

156 Buttrey cataloged the coins (and I did not recheck the identifications): Buttrey et al. 1981, p. xxii. Rautman suggested this deposit to me as an appropriate fifth-century deposit; he is working on the final publication of the villa and the results should be considered preliminary.
with the evidence from PN , the lower and upper mosaics of the south portico of the MMS/N Plaza (see also below, Section 3.6), and the Synagogue, we can perhaps postulate that there was some effort to throw coins in the bedding matrix of mosaics.

## Deposit 7 (Table 3.11g) ${ }^{157}$

The terminus post quem is provided by one coin of the total, from the third quarter of the fifth century. The presence of a third-century coin in a fifth-century context is no longer surprising, nor is the fact that the deposit is dated by only one coin.

## Deposit 8 (Table 3.11h) ${ }^{158}$

Note that I rejected four coins as being residual, as they are large and are found at the transition to another Lot (possibly the insertion of a pipe): Sardis, 245/220-second century BC (no. 52.59); Seleucid, third or second century BC (no. 93.27); uncertain

157 Greenewalt and Rautman 2000, p. 671.
158 Greenewalt, Ratté, and Rautman 1994, p. 26; cf. Evans 2013b.

Table 3.11f $5^{\text {th }}$ c. Deposit 6: Mosaic bedding from the Late Roman domestic complex in PN (excavated in 1960 and 1961), 53 coins. The mosaics of Rooms B and C are not clearly distinguished, so they are combined in this entry.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Maximian Herculius | $295-296 \mathrm{AD}$ | C61.0204 |
| Constantius II | $351-361 \mathrm{AD}$ | C61.0144, 200, 261, 266-268, 273 |
| Valens, Valentinian I | $364-375 \mathrm{AD}$ | C61.0197, 260, 262, 263 |
| Valentinian II | $378-383 \mathrm{AD}$ | C61.0298.1 |
| Theodosius I | 383 AD | C61.0199 |
| Salus Reipublicae | $383-395 \mathrm{AD}$ | C61.0156, C61.0278; M13 298.2 |
| Arcadius | $395-408 \mathrm{AD}$ | C61.0145-50, 152, 153, 201, 277; M13 298.3 |
| Concordia Aug cross | $395-408 \mathrm{AD}$ | C61.0154 |
| Concordia Augg Cp | $402-408 \mathrm{AD}$ | C61.0274; M13 298.4 |
| Gloria Romanorum 3 emperors | $402-408 \mathrm{AD}$ | C60.0102 |
| Gloria Romanorum 2 emperors shield or globe | $408-423 \mathrm{AD}$ | C61.0151, 275; M13 298.5 |
| Theodosius II | $425-450 \mathrm{AD}$ | C61.0264, 276 |
| Victoria Aug(gg) | $410-455 \mathrm{AD}$ | C61.0155 |
| Illegible | $4^{\text {th }}$ or $5^{\text {th }}$ century AD | C61.0298.6-10, 603, 610, 622, 624, 626, 629, 631, 632 |
| Illegible | $5^{\text {th }}$ century AD | C61.0607, 623 |
|  |  |  |

Table 3.11g $\quad 5^{\text {th }} \mathrm{c}$. Deposit 7: Late Roman building complex, under floor (MD2 96.1 Lot 16), 8 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Otacilia Severa | $244-245 \mathrm{AD}$ | 239.1 |
| Valentinian II, Arcadius, Honorius | $383-395 \mathrm{AD}$ | $709.12,800.20,835.2$ |
| Arcadius, Honorius | $395-401 \mathrm{AD}$ | $783.7,847.3$ |
| Leo I | $457-474 \mathrm{AD}$ | 987.37 |
| Illegible | $5^{\text {th }}$ century AD | 1003.213 |

Table 3.11h $\quad 5^{\text {th }}$ c. Deposit 8: Roman building, floor with Hoard 4 underneath (ByzFort 91.17 Lot 52), 94 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Claudius II Gothicus | $253-270 \mathrm{AD}$ | 288.1 |
| Diocletian | $284-305 \mathrm{AD}$ | 329.65 |
| Constantius II | $346-361 \mathrm{AD}$ | 549.1 |
| Securitas Reipublicae | $364-375 \mathrm{AD}$ | $684.27,684.60,684.95$ |
| Vot Mult | 383 AD | 956.2 |
| Concordia Aug(gg) or Cross in Wreath | $404-435 \mathrm{AD}$ | 963.129 |
| Leo I | $457-474 \mathrm{AD}$ | 988.6 |
| Uncertain monogram | $450-498 \mathrm{AD}$ | 999.228 |
| Illegible | $4^{\text {th }}$ century AD | 1001.195 |
| Illegible | $4^{\text {th }}$ or 5th century AD | $1002.46-48$ |
| Illegible | $5^{\text {th }}$ century AD | $1003.91-98$ |
| Victory l., Vandalic | $5^{\text {th }}$ or $6^{\text {th }}$ century AD | 1107.2 |
| Hoard 4, 71 coins | Latest datable, 474-491 AD | Evans 2013b |
|  |  |  |

Hellenistic (no. 94.30); and Pergamum (no. 105.1). ${ }^{159}$ The coins in the matrix reflect the coins in the hoard, with some late third-century coins added to the mix, a not unusual addition to fifth-century coinage.

The Mean Coin Date (MCD) for the deposits with more than seven coins fell between 346 and 443: the earliest was in the bedding of the lower mosaic of the south portico of the MMS/N Plaza, a deposit which appears to have closed in the early fifth century. About half of the coins in the deposit (48\%) were minted before the MCD; these numbers are close to those of the fourth-century drain/latrine complex in MMS/ N , which is not entirely surprising, since that complex closed in the late fourth century. Of interest is the MCD for the stratum under the mosaics in the villa at PN, which had a terminus post quem of the mid-fifth century: it was 394 , with $32 \%$ of the coins in the deposit minted prior to the MCD. None of the other fifth-century deposits had such high numbers of coins minted prior to the MCD (see Fig. 3.3). ${ }^{160}$

The deposit with a mid-fifth century terminus, MMS Late Roman Townhouse Room 3, had an MCD that was closer to the terminus of the deposit, 428, with $24 \%$ of the coins in the deposit minted before that date. By the end of the fifth century, the deposits could have low MCDs (the hydraulic feature in the MMS Late Roman Townhouse, Room 10, which was calculated at 439 and the Roman Building in ByzFort, which had an MCD of 423). However, the Late Roman Townhouse in MMS, Room 23, had an MCD of 443. All of these end-of-the-fifthcentury deposits had low numbers of coins minted before the MCD: $11 \%, 12 \%$, and $15 \%$, respectively.

It thus appears that in deposits that were spread under mosaics, depositors used third-century coinswhich were still available-but they had fewer coins from the first half of the fourth century available. The

## 159 Fieldbook ByzFort 91.17 I: 128-32.

160 Deposit 1, the mortar bedding for the lower mosaic of the south portico in MMS/N Plaza, had an MCD of 374, with $46 \%$ of the coins in the deposit minted before the mean. The Late Roman Townhouse hydraulic feature (Deposit 2) had a MCD of 449, with $43 \%$ of the coins minted prior to this date. Deposit 6 , under a mosaic in PN, had an MCD of 390, with $39 \%$ of the coins minted prior to the mean. Many fewer were minted after the median. Deposit 3 (Late Roman Townhouse Room 3 floor) and Deposit 9 (ByzFort) had MCDs of 437 and 444, respectively, with $72 \%$ and $23 \%$ of coins falling below their MCDs. Deposits 4, 5, 7, and 8 were too small to run the calculations.
other deposits, especially those of the mid- to late fifth century, show this lack more starkly. The mid-fifthcentury deposit still has a number of fourth-century coins, but the end of the fifth century shows that they are much less common in the circulation pool. The MCD calculation of the fifth-century deposits, then, shows that the indigenous coins normally are composed of a percentage of coins that were minted 50 or more years before the calculated mean. This profile is like the larger fourth-century deposit, and it fits closely with the argument that was made by Gabriela Bijovsky and others-that the fifth century uses earlier coins as legal tender.

### 3.6 Byzantine Contexts:

The Sixth through Early Seventh Centuries
Most Byzantine contexts were isolated within the residential quarter of MMS; Rautman provided me with specific information about these contexts. Isolating these deposits gives us a glimpse into the circulating coin pool in the sixth and seventh centuries. Deposits that can be isolated to the eighth through twelfth centuries are missing from Sardis.

## Deposit 1 (Table 3.12a) ${ }^{161}$

Although it appears that the terminus post quem from the coins for this deposit is ca. 475, and it looks very much like a fifth-century deposit, a deposit sealed underneath this floor contained a coin of Justin I (no. 1014.3).

## Deposit 2 (Table 3.12b)

Rautman suggested that the well was regularly cleaned, given the absence of sediment in the bottom; it was filled with architectural debris. The well was opened in the early fifth century, closing in the early seventh century (or possibly later), based on his reading of the pottery. ${ }^{162}$ Yet the terminus post quem for the closure of the well in the numismatic profile is the first quarter of the sixth century. I am not certain if the Roman Provincial coin is residual or infiltrated (the weight and diameter could well circulate in the fourth to mid-fifth century), but there were fourthcentury, as well as fifth-century coins in this deposit,

[^79]162 Rautman 1995a, p. 40 "Courtyard Well."

Table 3.12a $\quad 6 / 7^{\text {th }}$ c. Deposit 1: Late Roman Townhouse, Room 3, under plaster bedding for floor (MMS-I 85.1 Lot 42), 6 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Urbs Roma | $330-336 \mathrm{AD}$ | 436.1 |
| Restitutor Reip | $364-365 \mathrm{AD}$ | 614.6 |
| Leo I | $457-474 \mathrm{AD}$ | 985.3 |
| Illegible | $4^{\text {th }}$ or $5^{\text {th }}$ century AD | 1002.153 |
| Illegible | $5^{\text {th }}$ century AD | $1003.373,1003.439$ |

Table 3.12b $6 / 7^{\text {th }}$ c. Deposit 2: MMS-II 85.1 well, 12 coins.

| Issuer or Issue | Date | Catalogue No. |
| :--- | :--- | :--- |
| Roman Provincial | $1^{\text {st }}$ to $3^{\text {rd }}$ century AD | $230.66(19 \mathrm{~mm}, 2.96 \mathrm{~g})$ |
| Illegible | $4^{\text {th }}$ century AD | 1001.83 |
| Illegible | $4^{\text {th }}$ or $5^{\text {th }}$ century AD | $1002.181-183$ |
| Illegible | $5^{\text {th }}$ century AD | $1003.491-493,500-501$ |
| Decanummium | $498-607 \mathrm{AD}$ | 1199.4 |
| Justin I | $518-527 \mathrm{AD}$ | 1010.3 |

even if they were not legible. It appears that sixth- and seventh-century deposits at Sardis cannot be primarily dated by coins, as the coins of the sixth and seventh centuries can be missing entirely from a deposit.

## Deposit 3 (Table 3.12c) ${ }^{163}$

The Hellenistic coin is probably infiltrated into this layer, as there is ample evidence of Hellenistic coins under the Synagogue and Byzantine Shops, and the weight is not within the bounds of normal fourthor fifth-century coins. I have left this coin out of the MCD calculations, as I did for the Roman denarius and Roman Provincial coin (also too heavy to circulate easily in this era).

The coins from under the upper mosaic of the south portico of the MMS/N plaza show a pattern consistent with other mosaic floors in Sardis: there were a number of coins under the mosaic, with coins ranging from the

163 Rautman has prepared a preliminary list of coins from this context; I am grateful for his help. For 78.1, Harward, Final Field Report: MMS/N 78.1, p. 11. For 80.1, Fieldbook MMS/N 80.1 II: 23-24, 27, 57, 59. For 90.1, Rautman, Revised Coin List Report 1995. For 91.1, Fieldbook MMS/N 91.1 I: 67-73. For 92.1, Fieldbook MMS/N 92.1 I: 5; McIntosh, Final Field Report: MMS/N 92.1, pp. 9-10. For 96.1, Prieto, Final Field Report: MMS/N 96.1, pp. 17, 22-23. It should be noted that the latest coins come from 92.1 Lot 72 Basket 43, which Rautman preliminarily suggested was not an intrusion into the deposit. Even without this Basket, the terminus post quem would be a coin of Tiberius II, minted in 578, and the MCD would be lowered by only a few years.
fourth to the sixth century, and with about $20 \%$ of the coins dating to the fourth century (see Fig. 3.4). This deposit is a little unusual in that a few coins from the first half of the fourth century are present. As in the other deposits, the highest percentage of coins comes from periods at least 25 years before the youngest coin in the deposit. The terminus post quem from the identifiable coins is around 580-600, although only a small number of coins (from one year of excavation) provide the terminus.

The Mean Coin Date for the date when the coins came from the mints for this entire deposit is very low (416), which underscores how few coins give the coin terminus post quem. Fully $70 \%$ of the coins in the deposit fall below the MCD (Fig. 3.3). The fourthand fifth-century coins cannot have been residual or infiltrated; they must reflect circulating coins of the sixth century. The MCD underlines the lack of new coins coming into Sardis in the sixth century, necessitating the use of the older coins.

Table 3.12c $6 / 7^{\text {th }} \mathrm{c}$. Deposit 3: Bedding of the upper mosaic of the south portico of MMS/N plaza (MMS/N 78.1 not lotted; MMS/N 79.1 not lotted; MMS/N 80.1 not lotted; MMS/N 90.1 Lots 6, 8, 41; MMS/N 91.1 Lot 42; MMS/N 92.1 Lots 70, 71, 72; MMS/N 96.1 Lots 194-202), 678 coins. It appears that all or most of the deposits were sieved; a number disintegrated upon cleaning.

| Issuer or Issue | Date | Catalogue No. |
| :---: | :---: | :---: |
| Sardis civic coin | $\begin{array}{\|l} \hline 245 / 220-2^{\text {nd }} \\ \text { century BC } \\ \hline \end{array}$ | 52.57 (17 mm, 6.30 g$)$ |
| Lucius Verus, denarius | 165-166 AD | 233.1 |
| Roman Provincial | $\begin{aligned} & 2^{\text {nd }}-3^{\text {rd }} \text { century } \\ & \mathrm{AD} \end{aligned}$ | 142.1 (15 mm, 2.02 g ); 230.116 (frag'y) |
| Illegible antoninianus | $\begin{aligned} & 3^{\text {rd }}-\text { early } 4^{\text {th }} \\ & \text { century AD } \end{aligned}$ | 387.10, 387.18 |
| Victorinus | 269 AD | 304.1 |
| Licinius I | 313 AD | 345.1 |
| Constantine I | 311-328 AD | 376.1, 389.2, 581.2 |
| Providentiae Augg | 324-328 AD | 401.1, 409.1 |
| Helena? | 324-340 AD | 428.1 |
| Providentiae Caess | 325-326 AD | 447.1 |
| Urbs Roma | 330-337 AD | 432.1 |
| House of Constantine | 324-361 AD | 606.36, 606.39, 606.43, 606.46 |
| Victory on prow | 330-336 AD | 439.1, 441.2 |
| Gloria Exercitus 1 or 2 standards | 330-340 AD | $\begin{aligned} & 408.1,437.2,485.1,448.1,460.1,505.3,597.4,597.9,597.12,597.17 \text {, } \\ & 597.21,598.1 \end{aligned}$ |
| Constantine I, posthumous | 341-346 AD | 421.5 |
| Victory 1. | 342-347 AD | 599.2 |
| Fel Temp Reparatio FH | 346-361 AD | $\begin{aligned} & 526.2,527.4,555.1,557.20,557.28,558.8,558.12,559.8,559.18 \text {, } \\ & 559.35,562.1,604.10 \end{aligned}$ |
| Vot Mult or Victoriae dd Auggq nn or VNMR | 347-348 AD | $418.7,493.1,503.2,587.3,589.1,595.7,595.13,595.30$ |
| Spes Reipublice | 355-361 AD | 534.1, 546.1, 560.8, 560.13, 560.14, 560.19, 560.24, 560.27, 560.31, $560.41,560.45,560.47,560.51,560.52,571.1,575.3,575.6,605.8$ |
| Securitas Reipublicae or Restitutor Reip | 364-367 AD | $612.1,614.1,618.1,619.2,621.1,684.29,684.34,684.36,684.68$, $684.78,684.80,684.81,684.82,684.86,684.94,684.96,684.98$ |
| Securitas Reipublicae | 364-383 AD | 622.3, 622.5, 622.8, 679.6 |
| Gloria Romanorum 8 | 364-375 AD | 642.3, 682.3, 685.20, 685.54 |
| Valentinian I or II | 364-392 AD | 761.4 |
| Victoryl. | 364-435 AD | 887.25, 887.27, 887.41 |
| Concordia Auggg or Virtus Romanorum | 378-383 AD | $655.1,711.1,726.2,763.2,763.5,763.6,763.8$ |
| Victoria Augg(g) 2 Victories | 378-435 AD | 958.1, 958.3 |
| Theodosius I or II | 379-450 AD | 927.1, 927.6, 927.7 |
| Vot Mult | 383 AD | 665.1, 696.1, 713.1, 754.1, 825.14 |
| Salus Reipublicae | 383-395 AD | 703.1, 722.3, 722.4, 750.14, 787.1, 800.1, 878.1, 886.6, 886.26, 886.40, 886.43, 886.63, 886.72, 886.79, 886.82, 886.86, 886.87, 886.114, 886.121, 886.131, 886.140, 886.146 |
| Arcadius, Honorius | 383-408 AD | 808.1, 809.1, 809.3, 857.1, 870.5 |
| Vot Mult | 383-435 AD | 956.5 |
| Gloria Romanorum 18 or emperor horseback | 392-395 AD | 723.3, 731.2, 854.2, 889.3 |
| Urbs Roma Felix | 394-395 AD | 829.1, 829.2 |


| Virtus Exerciti 2 | 395-401 AD | 778.19, 778.27, 783.6, 803.27, 803.31, 847.14, 847.15, 855.6, 855.26, 880.3, 885.1, 885.11, 885.39, 885.50, 885.54, 885.71, 885.73 |
| :---: | :---: | :---: |
| Victoria Augg Victory 1. | 395-435 AD | 959.1 |
| Arcadius, Theodosius II | 401-406 AD | 791.2, 791.4, 799.1, 811.3, 913.1, 939.19 |
| Concordia Aug(gg) cross | 404-406 AD | 944.7, 944.8 |
| Gloria Romanorum 3 emperors or Concordia Auggg cross | 406-408 AD | 793.1, 797.1, 852.1, 940.4, 940.12 |
| Gloria Romanorum 2 emperors | 408-423 AD | $\begin{aligned} & \text { 859.1, 859.6, 860.1, 892.2, } 916.1,917.1,934.1,941.2,941.23,942.5 \text {, } \\ & 942.10,942.11,942.15,943.5 \end{aligned}$ |
| Victoria Augg | 410-423 AD | 830.2, 830.3 |
| Concordia Aug | 423-425 AD | 896.2, 928.1 |
| Cross in Wreath or Victoria Augg or Vrtvs Romanorvm or Concordia Aug Victory or Salus Reipublicae | 425-435 AD | 903.2, 909.1, 922.15, 922.28, 946.6, 946.8, 949.1, 954.1, 960.1, 963.3 , $963.4,963.9,963.14,963.17,963.20,963.40,963.41,963.47,963.51$, $963.55,963.60,963.73,963.75,963.86,963.87,963.99,963.103$, 963.105, 963.107, 963.117, 963.122, $963.136,963.146,963.150$, 963.156, $963.162,963.180,963.184,963.191,963.192,963.195$ |
| Vt XX V | 435 AD | 900.1, 924.7, 924.8 |
| ConcordiaAgv | 437 AD ? | 901.1 |
| Theodosius II, Valentinian III | 425-450 AD | 911.1 |
| Marcian | 450-457 AD | 964.2, 967.1968 .1 969.5, 969.7, 969.18, 969.26, 969.27, 969.49 , $969.54,969.57,969.68,969.72,969.75,969.89$ |
| Leo I | 457-474 AD | 974.7 975.1, 975.2, 976.1, 976.5, 976.7, 976.9, 983.1, 984.4, 984.8 , $985.4,985.10,985.14,985.36,985.37,986.15,986.19,986.31$, $987.15,987.17,987.44,987.48,988.5$ |
| Zeno | 474-491 AD | 997.2, 997.5 |
| Uncertain monogram | 450-498 AD | 999.5, 999.30, 999.54, 999.101, 999.102, 999.119, 999.127, 999.149, 999.175, 999.189, 999.212, 999.243, 999.256, 999.263, 999.291, 999.307 |
| Anastasius I | 491-498 AD | 1004.9, 1004.48, 1004.99, 1004.145 |
| Vandalic? | 518-526 AD? | 1121.1 |
| Vandalic? Copy? | 450-550? AD | 1108.1, 1111.1, 1113.1 |
| Illegible | $4^{\text {th }}$ century AD | 1001.111, 1001.12, 1001.120-129, 1001.131, 1001.133-136, 1001.138, 1001.139, 1001.141, 1001.142, 1001.143, 1001.145, 1001.146, 1001.149 |
| Illegible | $\begin{aligned} & 4^{\text {th }} \text { or } 5^{\text {th }} \text { century } \\ & \mathrm{AD} \end{aligned}$ | $\begin{aligned} & 1002.288-320,1002.327,1002.328,1002.356-371,1002.373, \\ & 1002.376-383,1002.388-395,1002.403-421,1002.423-432, \\ & 1002.435,1002.436,1002.443,1002.444,1002.445,1002.468-474, \\ & 1002.476-504,1002.506-509,1002.545 \end{aligned}$ |
| Illegible | $5^{\text {th }}$ century AD | 1003.117, 1003.118, 1003.912, 1003.913, 1002.915, 1002.984-1034, 1002.1045, 1002.1046, 1048, 1071, 1085-1089, 1096, 1113-1115, 1138, 1169, 1171-1179, 1181-1205, 1211-1216, 1252-1253, 12561268, 1270, 1272-1289, 1298-1299, 1334-1335, 1337, 1340-1374, 1436-1446 |
| Anastasius I-Justin II, half-follis | 498-578 AD | 1103.1 |
| Anastasius I-Heraclius, follis | 498-640 AD | 1224.1 |
| Justinian I, decanummium | 559/560 AD | 1036.2 |
| Justin II, follis | 566/567 AD | 1084.1 |
| Tiberius II, decannumium | 578 AD | 1126.1 |
| Tiberius II or Maurice, half-follis | 578-602 AD | 1178.1 |
| Maurice, follis | 582-602 AD | 1176.1 |
| Maurice, half-follis | 588/589 AD | 1146.1 |
| Maurice, follis | 590/591 AD | 1164.1 |

Table 3.12d $6 / 7^{\text {th }} \mathrm{c}$. Deposit 4: Tile fall on top of the upper mosaic of the south portico of MMS/N plaza (the collapse of the portico) (MMS/N 78.1 not lotted; MMS/N 89.1 Lots 10 and 11; MMS/N 90.1 Lot 11; MMS/N 92.1 Lots 62, 63; MMS/N 94.1 Lots 5, 61), 205 coins.

| Issuer or Issue | Date | Catalogue No. |
| :---: | :---: | :---: |
| Antiochus II | 261-246 BC | 78.1 |
| Pergamum | 133-27 BC | 28.1 |
| Roman Provincial | $1{ }^{\text {st }}$ century AD | 230.112 |
| Gallienus | 253-268 AD | 262.1 |
| Claudius II Gothicus | 268-270 AD | 271.2, 280.1 |
| Barbarous radiate | 270-300 AD | 297.9 |
| Constantius Chlorus | 295-299 AD | 341.4 |
| Licinius I | 314-324 AD | 344.1, 351.1 |
| Gloria Exercitus 1or 2 standards | 330-340 AD | 398.2, 398.7, 453.66, 465.1, 478.3, 480.3, 597.3 |
| Vot Mult | 347-348 AD | $479.1,488.2,584.1,587.5,593.1,595.19,595.27$ |
| Fel Temp Reparatio FH | 348-361 AD | $527.6,544.1,557.10,557.24,557.29,559.19,567.2,602.11,603.1$ |
| Spes Reipublice | 355-361 AD | 560.9, 560.30, 575.8, 605.3, 605.10 |
| House of Constantine | 324-363 AD | 606.7 |
| Securitas Reipublicae or Gloria Romanorum 8 | 364-367 AD | $673.1,676.2,684.47,684.61,684.66,684.100,685.51$ |
| Valens | 364-375 AD | 643.3 |
| Concordia Auggg Roma | 378-383 AD | 716.1, 763.1 |
| Victory l. | 364-435 AD | $887.18,887.29,887.42,887.50$ |
| Victoria Auggg 2 Victories | 383-388 AD | 690.1 |
| Vot Mult | 383 AD | 661.1, 706.3, 720.1 |
| Salus Reipublicae | 383-392 AD | $742.1,750.2,750.7,767.1,794.4,798.1,800.7,813.2,862.5$ |
| Gloria Romanorum 18 or emperor on horseback | 392-395 AD | 801.1, 879.1 |
| Virtus Exerciti 2 | 395-401 AD | 778.2, 778.4, 803.17, 803.21, 832.1, 885.49, 885.72 |
| Arcadius, Honorius | 401-408 AD | 930.2, 939.14 |
| Gloria Romanorum 3 emperors or Concordia Aug cross | 406-408 AD | 805.1, 841.3, 940.12, 940.43, 944.1 |
| Gloria Romanorum 2 emperors | 408-423 AD | 918.1, 941.5, 941.16, 942.3, 942.8, 942.17, 943.4, 943.6 |
| Cross in Wreath | 425-435 AD | $\begin{aligned} & 922.12,922.22,963.8,963.15,963.19,963.29,963.49,963.126, \\ & 963.174 \end{aligned}$ |
| Marcian | 450-457 AD | 967.4, 968.1, 969.18, 969.49, 969.50, 969.57, 969.69, 969.92 |
| Leo I | 457-474 AD | 984.19, 985.13, 985.17 |
| Zeno | 474-491 AD | 995.2, 995.17, 997.55, 997.68 |
| Uncertain monogram | 450-498 AD | $\begin{aligned} & 970.2,999.37,999.59,999.62,999.80,999.124,999.174,999.182 \\ & 999.187,999.257,999.284 \end{aligned}$ |
| Illegible | $4^{\text {th }}$ century AD | 1001.118, 1001.19 |
| Illegible | $\begin{aligned} & 4^{\text {th }} \text { or } 5^{\text {th }} \text { century } \\ & \mathrm{AD} \end{aligned}$ | 1002.341-354, 384-387, 398-399, 461-466 |
| Illegible | $5^{\text {th }}$ century AD | $\begin{aligned} & 1003.942-943,945,1156-1164,1166,1217-1223,1241-1242, \\ & 1319-1321,1325,1395-1397,1870 \end{aligned}$ |
| Anastasius I, nummus | 491-498 AD | 1004.115, 1004.128 |
| Anastasius I, half-follis | 498-512 AD | 1005.2 |


| Anastasius I, pentanummium | $512-518 \mathrm{AD}$ | $1007.1,1007.2,1007.3,1007.4$ |
| :--- | :--- | :--- |
| Justin I-Justinian I, pentanummium | $518-538 \mathrm{AD}$ | 1063.1 |
| Justinian I-Justin II?, pentanummium | $538-578 \mathrm{AD}$ ? | 1050.1 |
| Justinian I, follis | $539 / 540 \mathrm{AD}$ | 1021.2 |
| Justinian I, follis | $546 / 547 \mathrm{AD}$ | 1029.1 |
| Justinian I, decanummium | $556 / 557 \mathrm{AD}$ | 1033.1 |
| Justin II, pentanummium | $565-578 \mathrm{AD}$ | $1073.2,1073.16$ |
| Justin II, half-follis | $566 / 567 \mathrm{AD}$ | 1074.2 |
| Justin II, half-follis | $568 / 569 \mathrm{AD}$ | 1077.1 |
| Justin II, follis | $569 / 570 \mathrm{AD}$ | 1085.1 |
| Justin II, half-follis | $571 / 572 \mathrm{AD}$ | 1068.1 |
| Justin II, half-follis | $574 / 575 \mathrm{AD}$ | 1082.1 |
| Justin II, follis, half-follis | $575 / 576 \mathrm{AD}$ | $1070.1,1071.2,1083.2$ |
| Tiberius II, half-follis | $579-582 \mathrm{AD}$ | 1134.1 |
| Maurice, half-follis | $582 / 583 \mathrm{AD}$ | 1159.1 |
| Maurice, follis | $584 / 585 \mathrm{AD}$ | 1141.1 |
| Maurice, decanummium | $582-602 \mathrm{AD}$ | 1157.1 |
| Phocas, follis | $602 / 603 \mathrm{AD}$ | 1181.2 |
| Phocas, half-follis | $603-610 \mathrm{AD}$ | $1184.2,1184.10$ |

## Deposit 4 (Table 3.12d) ${ }^{164}$

It is possible that the Hellenistic, Roman, and Roman Provincial coins are a secondary deposit (i.e., washing in from nearby soils), but in this area, the Hellenistic and Roman layers are deeply buried, due to the construction phases and long period of inhabitation in the fourth through sixth centuries. It is more likely that they have infiltrated from the lower levels. The coins are not included in the calculations for the MCD. The latest coins from the tile fall are coins of Phocas, found only in the first season of excavation of this deposit.

As in circulation hoards, the peak of the dates fall in the quarter-century before the deposit closed, as happens here. However, it is interesting that the largest number of legible coins in this deposit comes from the second half of the fourth century, with plentiful numbers from the previous 50 years as well the first

[^80]quarter of the fifth century (Fig. 3.4). A somewhat similar profile is seen in the deposits under the upper mosaic of the south portico of MMS/ N and all the deposits dated to the fifth century.

The MCD for the tile fall deposit is 424, again a low figure for a deposit that closed in the early seventh century. In this case, $41 \%$ of the coins in the deposit are earlier than the MCD (which is in keeping with fourth- and early to mid-fifth-century deposits); only $2 \%$ of the coins give the coin terminus post quem (Fig. 3.3). These calculations reinforce the argument that fourth- and fifth-century coins were an important part of sixth- and early seventh-century coin circulation.

The overall profile for both the tile fall and the upper mosaic bedding of the south portico of MMS/N follows the same trend as the AACL/1000, with a higher peak for the upper mosaic in fifth-century coins (compare Figs. 2.3, 2.4). Since the numbers for the AACL, upper mosaic, and tile fall are similar, it thus appears that the lack of coin supply drastically affects the circulation pool of the city. Fewer coins are lost, or not recovered, from the sixth and early seventh centuries, even given the increasing size of the individual coin. It is very likely that individuals were lacking in small change and had to be content with old issues (see above, Section 2.7). The difference between
the two large deposits is significant, as is shown in an analysis of Chi-Square Goodness of Fit test of the two. This statistical analysis tests the differences between the measured results and the theoretically-expected result. The results show that there was no difference in proportion between the two groups of coins. Thus, the finding that the tile fall is only eight years "older," on average, than the upper mosaic bedding, is shown by the p -value to be to be a strongly significant comparison (see App. 4.3). ${ }^{165}$

A similar result was reported for the early sixthcentury levels at Carthage by Reece, in Beirut by Butcher, Butrint by Moorhead, and in mid-sixthcentury levels in Sagalassus. ${ }^{166}$ Butcher and Moorhead had argued that large Byzantine bronze coins circulated alongside nummi, at least in the eastern provinces in the first half of the sixth century. Their evidence came from both excavation levels and hoard evidence. These results should be cautionary to archaeologists who use the coins in dating the strata. Even when sixth- or early seventh-century coins are present, they form a very small percentage of the total number of recovered coins. That is, the coins do not consistently show the true terminus post quem of the sixth and early seventh centuries.

The loss of mints along with a disinterest by the government in producing the smaller denominations may reflect the reasons why there are so few sixthand seventh-century coins in sixth- and seventhcentury deposits. Clearly, the Sardians had to press

165 I examined the data in two ways: one calculating the difference between groups that had more than counts of five: the distribution of the coins was no different in the upper mosaic and the tile fall, as the chi-squared value was 42 , with the degrees of freedom 36, and the p-value of 0.2 (the probability that the comparison could have been more extreme than in the samples; since it is more than .05 , the results are significant). If the groups are examined the same way, except all the values between 499 and 624 AD (to cut down on the number of cells with values less than five), the result is similar, with a chi-squared value of 56, degrees of freedom 49, and the p-value remains the same. There are no detectable differences between the groups. My thanks to Thomas M. Evans for the statistical work.

166 Reece 1984a, pp. 172-73; Butcher 2001/2, p. 102; Moorhead 2007, pp. 297-98; Poblome 1995. See also the Tel Malot hoard (Israel): although only about half of the approximately 26,000 coins have been identified, ca. $1 \%$ of the coins were minted prior to the fourth century; $9 \%$ came from the fourth century; $90 \%$ were minted in the fifth century, and so far, only one coin dates the closing of the hoard in the sixth century. The jug in which the hoard was concealed is dated to the first half of the sixth century (Kindler 2000).
into service coins that were 200 or even 300 years old, at least when they were transacting monetary exchanges. More interesting is the problem of defining when the monetary economy was severely disrupted. While natural disasters and/or invasions may have contributed to the lack of excavation coins, this phenomenon began in the sixth century and would continue for the rest of Byzantine Sardis.

### 3.7 Coins Used as Amulets

Another interesting use of coins in a magico-religious context is their reuse as amulets. Several of the coins recorded in the current excavations were pierced for hanging or attachment. Most were pierced so that the head of the emperor was hung upright: Gordian III (no. 202.1, the reverse of Tyche would be upside down); Maximian Herculius (no. 332.1, the reverse is illegible); uncertain emperor of the early fifth century (no. 942.7, neither side upright if hung); Phocas (no. 1182.1, emperor's face upright); lead token, with a quadruped walking (L13). One coin was pierced, but neither Salonina nor the figure of Tyche on the reverse would have been shown upright (no. 120.1); two were pierced for attachment through the middle of the coins (nos. 264.1, 986.8 ), possibly to show the Fortuna or the emperor dragging a captive on the reverse (coins of Gallienus and Leo). A coin of Galerius Maximian, was pierced around 2 o'clock, so neither the head of the emperor nor the Genius would be shown upright (no. 336.1). No orientation could be discerned for a coin of Theodosius (no. 752.1), nor a coin from the House of Constantine (no. 582.1), nor an Augustan coin (no. 218.2), nor two fourth- or fifth-century coins with a victory type (nos. 887.17, 887.56). One Hellenistic coin, worn smooth and countermarked, was pierced to hang at some point in its life (no. 94.82).

A huge follis of Justinian I was pierced twice for attachment (no. 1048.1). It is clear that the use of a coin as an amulet was popular, at least in Late Antiquity, for John Chrysostom inveighed against wearing "bronze coins of Alexander of Macedon" as amuletic bracelets and anklets (ad illuminandos catechesis II.5, PG 49:240). ${ }^{167}$ A post-reform follis of Justinian, engraved by the user with a cross followed by the words $\mathrm{K}(\mathrm{v} \rho \mathrm{l}) \mathrm{E}$ (or X $\rho \stackrel{\sigma}{ }(\varepsilon)$ BOHOI TON

[^81]ФOPINTA, "Lord help the wearer" is illustrated by Mary Margaret Fulghum; the phrase is common on lead seals (cf. L17-19). ${ }^{168}$ Fulghum suggested that the NIKH in the exergue may have prompted the use of this coin as an amulet. ${ }^{169}$ The Sardis coin, minted in Cyzicus, fails to have this association. More probably, in my mind, the coin was chosen for the horse and rider on the emperor's shield (as Fulghum), which was equated with Alexander the Great, the Holy Rider, or perhaps a militant saint or the emperor. ${ }^{170}$

Pierced coins were placed in graves through the Early Byzantine period. ${ }^{171}$ No pierced coins have been found in graves in Sardis. Even in the twelfth century, the teacher of rhetoric Michael Italikos sent a coin to the emperor bearing "Constantine the Great," "Helena" and "Christ" as "an imperial nomisma invested with an ineffable force" that would work against "all evils," but especially diseases. It was not just the images that were powerful, but also the fact that the images were impressed on a coin made them potent: "there is an ineffable power peculiar to this object . . . that has perhaps been injected into it by the instruments of the metalworkers." ${ }^{172}$

Only a few contexts of these pierced coins are known. ${ }^{173}$ The coin of Gordian III came from a possible occupation layer in a house, dated by a lamp to the Late Roman period (fifth century?). However, the coin may have been part of a fill that was used to level the floor of the room, and although it is worn, it may not have been in use for 300 years before deposition. The coin of Maximian Herculius came from a dump, as did the coin of the House of Constantine and one of the victory coins (no. 887.56). The Hellenistic coin may have come from a Roman-era wall (later destroyed), which would make sense, given its worn types. The coin of

[^82]Galerius was found in a sixth-century context in a fill beneath a floor; the early fifth-century coin was from a context that included an early seventh-century coin (a not-uncommon association; see Section 3.8). The Phocas coin came from a fill that contained Hellenistic and Late Roman coins. Deposits closer in date to the minting of the coin include the coin of the first half of the fourth century, from Late Roman fill around graves in HoB; the coin of Leo I, found in a fill from the fifth century; and one of the victory coins (no. 887.17), from another fifth-century fill. Russell cites an instance of a second-century coin found on a seventh-century floor in Anemurium, and he notes that first-century coins were used in fourth-century necklaces. ${ }^{174}$ The contexts of the pierced coins at Sardis may not be defined as clearly as at Anemurium, but it is clear that from the first century AD to the twelfth century, coins were used to ward against evil that threatened the Sardians.

### 3.8 Hoards

Eight hoards were discovered in the recent excavations; seven of these were deposited in the fifth century and consist of small copper-alloy coins. ${ }^{175}$ These contribute to our understanding of the circulation of coin in the fifth century. Six of the Late Roman hoards have been previously published, ${ }^{176}$ and details of those hoards will not be repeated here; also of note are the hoards in Graves $80.2,80.3,80.4$, and 80.5 in the HoB Mausoleum, which all closed in the mid to late fifth century (see above, Section 3.4.3).

## H1 Third-century hoard in MMS-II 85.1

This small accrual of coins was found in the debris of a roof collapse in the "Late Roman Townhouse" in MMS (Table 3.13). The excavator identified the accumulation as a "savings hoard." ${ }^{177}$ Because of the circumstances

174 Russell 1995, pp. 47-48.
175 Only one fourth-century hoard has been recorded at Sardis (Bell 1916, p. viii). Hoard D, an early sixth-century (?) hoard in PN, was recognized as a hoard stashed in an industrial sector of Unit Q; there may have been some contamination. About 120 minimi/ nummi were found, but 69 were reported to have disintegrated upon cleaning. Buttrey dated the legible remainders from 375-392 to 518-527; he preferred to see this as an accumulation, not a hoard (Buttrey et al. 1981, p. xxii; cf. Burrell 2007, p. 240). I did not graph this hoard, since so few coins survived for review.
176 Evans 2013b.
177 Rautman, Final Field Report: MMS-II 85.1, p. 9.

Table 3.13 Hoard 1: Late Roman Townhouse, Room 10, Lot 25.

| Date of Issue | Mint | Catalogue No. |
| :--- | :--- | :--- |
| $190-75 \mathrm{BC}$ | Smyrna | $48.2(15 \mathrm{~mm}, 3.3 \mathrm{~g})$ |
| $260-268 \mathrm{AD}$ | Rome | 253.1 |
| $260-268 \mathrm{AD}$ | Rome | 245.1 |
| $260-268 \mathrm{AD}$ | Rome | 250.1 |
| $260-268 \mathrm{AD}$ | Rome | 252.1 |
| $270-300 \mathrm{AD}$ ? | Uncertain | 294.10 |
| $270-275 \mathrm{AD}$ | Ticinum | 315.2 |

of its secondary deposition, any container was destroyed, and the coins were scattered. It is likely that the hoard consisted of seven coins, including a Hellenistic coin (of a size that would circulate in the third century), a coin of Severina, and a posthumous issue of Claudius II Gothicus. Six of the coins are antoniniani, four of them minted under Gallienus. The hoard seems to have closed before the reforms of Diocletian; it is likely to have been a circulation hoard since the antoniniani were all minted with a few years of each other. It is unclear how this hoard ended up in a Late Roman house.

## H2 MMS/S $1982{ }^{178}$

The hoard was buried in a cloth bag near a door on the MMS Road (unnumbered room). Consisting of 695 coins, the small copper-alloy issues ranged in date from the first century BC to ca. 518 AD , with the vast majority of the coins dating to the second half of the fifth century. Since the value of the hoard was low, in Grierson's terms, this is an "accidental loss" hoard, small change accumulated from circulating coins; ${ }^{179}$ there is no known emergency in Sardis at the very beginning of the sixth century that would account for this hoard. It contributes to our understanding of circulating coin in the fifth century, the body of which was made of newly-struck issues, worn older (sometimes much older) coins, slugs or unstamped flans, and largely lead blanks. Also included in this hoard were nine Vandalic coins, an unusual group of coins for Sardis, dating to the reign of Thrasamund.

178 Previously published in Burrell 2007 and Burrell 2008 and mentioned in Greenewalt, Rautman, and Meriç 1986, p. 10; Greenewalt et al. 1985, p. 76.

179 Grierson 1975, p. 131.

As Burrell pointed out, the hoard sheds light on the monetary reforms of Anastasius I and his endeavor to restore the place of copper-alloy coins within the monetary system. ${ }^{180}$

The pattern of coin loss (Fig. 3.5) shows a long taper on the curve for earlier coins, including some from the early fourth century (coins of the first century BC and first century AD were left out of the data, as the length of the tail would have skewed the graph into illegibility). This long "tail" is normal, as coins of earlier periods are not as common in the coin pool, due to loss from circulation, or sometimes due to reminting. ${ }^{181}$ The bulk of the coins should come from the period just before the coin hoard was deposited, since these coins were still very much in circulation, as occurs in most of the hoards in this graph. We would expect only a few coins of the latest period, especially the monograms of Anastasius I, if the hoard closed during his reign, as they had more recently entered the circulation pool and would not have penetrated to the non-mint cities as deeply as the coins of previous rulers. Indeed, the nummi hoarded here were all produced in the first seven years of Anastasius I's reign, yet they comprise the bulk of the coins from the period. Once the reformed folles of Anastasius I were introduced, the nummi were driven out of circulation, to be hoarded or even discarded. However, as can be seen in the deposits, these nummi circulated long into the sixth century. Although the number of coins seems impressive (and endless to the numismatist who must record them), 695 nummi was worth comparatively little, perhaps "a few days' wages." ${ }^{182}$

[^83]H3 Long North Hall (Bath-Gym Complex) $1968{ }^{183}$ The hoard consists of only 12 coins, placed in a small jug and abandoned in an unfinished room of the BathGymnasium Complex at the close of the fifth century. It is an "accidental loss hoard" as well. The coins were published in the earlier catalogue, but Buttrey did not discuss the coins individually or as a hoard. ${ }^{184}$ The hoard closed slightly earlier than Hoard 2, probably during the reign of Zeno, or by 491; the earliest coins in the hoard dated to 335-341. Like Hoard 2, it contained coins that are sometimes conjectured to have been recalled by the fourth-century Imperial mint (see Section 2.5.1). Figure 3.4 shows this long taper, as in Hoard 2, but the percentage of coins from the closing quarter-century (475-498) is equal to the previous quarter-century (450-474). The number of coins in this hoard is very small, and it cannot be used to provide a pattern for the other hoards.

## H4 Byzantine Fortress $1991^{185}$

The hoard consists of 71 coins which were placed in a pilgrim flask and hidden under a tile floor in a domestic quarter in an area near the center of the ancient city. Like Hoard 3, it is closed with a coin carrying a monogram of Zeno (474-491); but the composition should mean that it was a savings hoard. There are a number of illegible fifth-century coins in the hoard, but no evidence of clipped coins. There are no coins predating 383-392; however, as Hoard 2, the peak in the percentage of coins comes in the period before the closing of the hoard.

## H5 MMS-III $1986^{186}$

Found not far away from Hoard 2, this hoard consisted of 83 coins, also originally in a cloth bag, hidden in a garbage dump, and an accidental loss hoard. The hoard closed with issues of Leo I (457-474), with the earliest coin dating to ca. 351-361. Clipped coins were present in this hoard, with illegible flans (some possibly unstamped), and some heavily-leaded flans,

[^84]again testifying to the varied nature of coins in use at the end of the fifth century. The coins stop abruptly with the reign of Leo I, forming a loss peak in this quarter of the fifth century; they are thus unlike the pattern of Hoards 2, 4, 6, and 8. They form a regular descent into the mid-fourth century, a pattern we can see is normal for fifth-century hoards (see Fig. 3.5).

## H6 MMS-I $1983^{187}$

This hoard was found in the same residential quarter as Hoards 2 and 4, in Room 3 of the Late Roman Townhouse. It consisted of 29 coins. Found under a tile floor, it was perhaps unintentionally concealed as the house was renovated; no traces of a container were found, as is typical for an accidental loss hoard. ${ }^{188}$ Two of the coins were clipped, and the earliest coin dated to 364-388. Like Hoard 5, it contained heavily-leaded flans and flans without apparent types; as with Hoard 5, it closed in the reign of Leo I. It appears (see Fig. 3.5) to follow the rules of coin loss for hoards, as the period of Leo's reign forms only a secondary peak in the year of issue in the hoard, with a long tailing off to the third quarter of the fourth century.

## H7 MMS-I $1985^{189}$

There were only ten coins in this small hoard, which was kept in a textile bag in the corner of Room 3 in the Late Roman Townhouse. The hoard was forgotten, and a mortar floor covered the area where it was concealed; it, too, is an accidental loss hoard. Like Hoards 5 and 6, the last identifiable issue came from Leo's reign, 457-474; more than half of the coins were unidentifiable beyond the century of minting, leading to a hoard pattern (Fig. 3.5) that is difficult to use as a pattern for other hoards.

## H8 Field 49 11.1 Lot 107

This hoard (Table 3.14), not previously published, was discovered in a residential area of the Late Roman period. The context of this hoard was a deep fill in a chamber with no entry, underneath a stone bench; the fill contained a large number of lamps, which showed signs of use. The lamps may suggest that this chamber

[^85]Table 3.14 Hoard 8: Field 49 11.1 Lot 107 (note: two disintegrated in cleaning).

| Date of Issue | Reverse Type (see App. 3); Mint (if known) | Catalogue No. |
| :---: | :---: | :---: |
| 270 AD and later | Bust r. rad./flaming altar, variable legend; one from Rome or Mediolanum | 292.7, 297.6 |
| 324-330 AD | Helena/standing figure, clipped into oval shape | 426.1 |
| 337-340 AD | Constantine II/Virtus Augusti; Rome, clipped | 445.1 |
| 347-348 AD | House of Constantine/Vot Mult; Nicomedia, clipped into oval shape | 587.2 |
| 348-361 AD | Constantius II/Fel Temp Reparatio FH | 559.28 |
| 355-361 AD | Constantius II/Spes Reipublicae; Cyzicus (1) | 545.4, 560.48 |
| 364-375 AD | Uncertain/Gloria Romanorum 8, possibly clipped | 685.47 |
| 364-375 AD | Uncertain/Securitas Reipublicae | 684.56 |
| 364-435 AD | Uncertain/Victory l. | 887.20 |
| 378-450 AD | Theodosius I or II/illegible | 927.3 |
| 378-383 AD | Gratian/Vot XV Mult XX; Nicomedia | 656.1 |
| 383-395 AD | Uncertain/Salus Reipublicae | $\begin{aligned} & 886.4,886.9,886.21,886.34,886.38, \\ & 886.52,886.83,886.84,886.117 \end{aligned}$ |
| 388-395 AD | Arcadius/Salus Reipublicae | 800.9 |
| 392-423 AD | Honorius/illegible, clipped | 863.5 |
| 395-401 AD | Honorius/Virtus Exerciti 2 | 855.28 |
| 395-401 AD | Uncertain/Virtus Exerciti 2 | 885.28, 886.37, 886.64 |
| 400-450 AD? | Bust r. pd [...]VSPFAVG/SAB(?)LICAE; Constantinople? | 872.1 |
| 425-455 AD | Valentinian III/Victoria Augg; Rome | 946.2 |
| 425-435 AD | Theodosius II/Cross in Wreath; Constantinople | 898.4, 922.4 |
| 425-435 AD | Uncertain/Cross in Wreath; Constantinople (1) | 961.3, 963.45, 963.66, 963.157 |
| 450-457 AD | Marcian/monogram | 969.13, 969.31, 969.40, 969.41, 969.47 |
| 457-474 AD | Leo I/emperor and captive | 986.2, 986.3 |
| 457-474 AD | Leo I/empress b/E | 987.2 |
| 476-491 AD | Zeno/monogram; Cyzicus (2) | 995.11, 995.22, 997.59 |
| 450-500 AD | Uncertain monogram | $\begin{aligned} & \text { 999.11, 999.52, 999.66, 999.87, } \\ & 999.107,999.122,999.140,999.244 \end{aligned}$ |
| $4^{\text {th }}$ century AD | Illegible; assigned by module | 1001.191, 1001.192, 1001.193 |
| $4^{\text {th }}$ or $5^{\text {th }}$ century AD | Illegible | 1002.53-65 |
| $5^{\text {th }}$ century AD | Illegible; assigned by module | 1003.104-149, 151-154 |

was entered via a ladder or steps, with no exterior exit. This hoard was found spread shallowly in a $3-4 \mathrm{~cm}$ horizontal layer, but no signs of its container were found; it must also have been an accidental loss. ${ }^{190}$

The coins must have been in a box or bag, and possibly unintentionally dumped into the fill, for the closing date of the hoard is contemporary with the latest pottery in the deposit. ${ }^{191}$ The coins in the hoard thus comprise a picture of the coins in circulation at

190 Cahill 2014a, p. 126; cf. Fieldbook F49 11.1 II: 59-74.
191 Rautman and DeRidder Raubolt, pers. comm.
the end of the fifth century. Since the soil around the coins contained a great deal of mortar, many of the coins were illegible and could only be dated to the fourth to fifth century or just the fifth century (the date of the latter is due to the size of the coins, which were about 10 mm and weighed less than 1 g ). The hoard consisted of 123 coins, all small copper-alloy coins, and closed with coins stamped with the monogram of Zeno (see Fig. 3.5). It follows the regular pattern of a long "tail" leading to a peak in the 50 years before the closing of the hoard.

The closing date of the hoard is harder to assess, given the number of fifth-century illegible coins: the hoard probably closed in the reign of Zeno, certainly by 498. Coins that were over 200 years old were included in the hoard; judging by the few mints that could be discerned, eastern mints predominated, but occasional coins from western mints were present. One copy was included, but no Vandalic coins were detected.

The hoard was unique for Sardis in containing billon antoniniani issued after the death of Claudius II; yet deposits of the fourth and fifth centuries contain these coins (see above). They appear to be Imperial issues, but even when they came from the mint, they were quite small and weighed less than two grams. Many coins of this type were clipped in antiquity, though it does not appear that these particular coins were. They would have been among the larger coins of this hoard. Seven other coins do appear to have been clipped; as one would expect, the earlier coins are clipped, as well as the larger end-of-the-fourthcentury coins. Clipped coins are found in hoards and excavations in Asia Minor but not further south. ${ }^{192}$

Coins from almost every decade of the fourth century are found in the hoard, and would have been saved as legal tender. The coins span several reforms of the Late Roman coinage, and the case for recalling fourth-century coins gets that much weaker. Figure 3.5 shows a peak in the date when the coins were issued at 450-474, with a slight dropping off in the next period (475-498), the period when the hoard closed, and a long taper back to the beginning of the coins of Constantine, ca. 324-346.

## Conclusions about the Late Roman Hoards at Sardis

As I noted in my publication on Hoards 2 through 6, parallels to the hoards in Sardis are difficult to make, since publication of hoards of small copper-alloy coins lags far behind the interest in gold hoards. ${ }^{193}$ However, the patterns noted in the composition of the hoards were already apparent to Kent by 1994. In his discussion of fourth- and fifth-century hoards, he noted that thirdcentury radiates could be present in western hoards, along with Gloria Exercitus, Fel Temp Reparatio FH, and Spes Reipublicae reverses. Gloria Exercitus and

192 Burrell 2007, p. 239; Bijovsky 2012, p. 59.
193 Evans 2013b.

Salus Reipublicae reverses were most commonly found in hoards, of all the reverses minted in the second half of the fourth century. Kent also observed that coins from western mints, such as Honorius's Urbs Roma Felix, Gloria Romanorum (of both varieties), and Victoria Augg were present in eastern hoards; he noted that copies or counterfeits (which can be difficult to distinguish from the technically-poor strikes coming out of Imperial mints) are common in hoards. ${ }^{194}$

In hoards in the eastern Mediterranean that close in the late fifth century (Table 3.15), we find a variety of Hellenistic to Roman Provincial coins included in pots or bags as legal tender (Kish, Qaw el-Kebir, Abu Mina, "Lebanon" 1988, Tel Malot, Corinth 1930, and Volo, to which add Sardis H2). We can no longer consider these as intrusions or "keepsake" coins, ${ }^{195}$ but as normal component parts of fifth-century circulation, which pressed every available official-looking piece of copperalloy coinage into use. ${ }^{196}$ This might be surprising considering the number of small coins pouring from the official mints, but clearly demand outstripped supply, as blanks, lead slugs, and crude copies accompanied these early coins. These early inclusions come from almost every province and are not just evidence that monetary supply to one province lagged.

If fourth-century coins had been subjected to recalls, demonetization, or decrees that rendered them worthless or illegal we would expect to see them in very few hoards. Yet, from Egypt to Palestine to Syria to Greece, coins of Constantine and his sons are included in hoards. If the hoard was a votive hoard, one could argue that the depositor gave the coins to the deity, as they were unusable in the physical world. However, the circulation hoards from Kish, Kellia, Hawara (nos. 1-4), Qaw el-Kebir, Egypt (nos. 3 and 4), Hama, "Beirut," "Lebanon" 1988, Haft-tapeh, Taburabat, and Corinth, as well as Sardis H2, H3, H6, and H8, all contain coins from the first half of the fourth century.

As noted above, we would expect to see the bulk of coins coming from the period just before the closing of the hoard (and not from the period of closure). This is certainly true of five of the hoards of Sardis. There are some differences among the provinces. For

[^86]instance, we are now able to see a pattern in fifthcentury coinage in Sardis that is different from the fifth-century circulation in Palestine. Hoards from Palestine do not include clipped coins as do the hoards in Sardis, but the hoards farther south include imitation Axumite and Vandalic coins as well as coins from Alexandria. In Egypt and Syria/Lebanon, we also see imitation Axumite coins, along with coins from Rome, at least during the reign of Valentinian
III. Imitation Axumite coins are rare to non-existent north of Palestine; coins from the mint at Alexandria are scarce. Vandalic coins, which make a sizable component of Palestinian hoards, are not very common at all at Sardis. Some coins of Valentinian III from the mint at Rome were found in the excavations, but they were not found in the hoards in Sardis. Local imitations are much more prevalent in Egypt and Syria than in Sardis.

Table 3.15 Comparative hoards of copper-alloy coins closed in mid- to late fifth or early sixth century from the eastern Mediterranean.

| Hoard Location | Date of earliest coin-latest issue | No. of Coins | Mints Represented, when legible | Details |
| :---: | :---: | :---: | :---: | :---: |
| Kish, Iraq ${ }^{\text {i }}$ | Greek-ca. 440 AD ? | 169 | Includes Sassanian | 1 "Greek," Cyzicus, Antioch |
| Kellia, Egypt ${ }^{\text {ti }}$ | $\begin{array}{\|l\|} \hline \text { ca. } 270 \text { to } \\ 450-457 \mathrm{AD} \end{array}$ | ca. 200 | Cyzicus, Nicomedia | In monastery or hermitages; the bulk of the coins date to the reigns of Theodosius I, Arcadius, and Honorius; few mints recorded; 3 imitations (2 barbarous radiates, 1 Fel Temp FH type) |
| Hawara 1, Egypt 1892iii | $\begin{aligned} & 306-336 \text { to } \\ & 474-491 \mathrm{AD} \end{aligned}$ | 866 | Local imitations, uncertain eastern, Axum | Only 49 coins identified |
| Hawara 2, Egypt 1938iv | $\begin{array}{\|l} 324-336 \text { to } \\ 474-491 \mathrm{AD} \end{array}$ | 43 | Constantinople, uncertain eastern, local imitations |  |
| Hawara 3, Egypt 1938 ${ }^{\text {v }}$ | $\begin{array}{\|l\|} \hline 324-336 \text { to } \\ 474-491 \mathrm{AD} \end{array}$ | 892 | Rome (Valentinian III), Aquileia, Constantinople, Antioch, uncertain eastern | Only 4 coins of Zeno reported, but 58 of Leo I; includes imitations? of Gloria Romanorum 8; 9 lead blanks |
| Hawara 4, Egypt 1938 ${ }^{\text {vi }}$ | $\begin{aligned} & 324-346 \text { to } \\ & 518 \mathrm{AD} \end{aligned}$ | 348 | Rome (Valentinian III), Vandalic coin, Constantinople, uncertain eastern, local imitations | Imitation Victory 1. |
| Hawara 6, Egypt 1938vii | $\begin{aligned} & 383-395 \text { to } \\ & 518 \mathrm{AD} \end{aligned}$ | ca. 1300 | Vandalic, uncertain eastern, local imitation | Only 9 coins identified; imitation of Victory l. |
| Qaw el-Kebir, Egypt ${ }^{\text {viii }}$ | $4^{\text {th }}$ century BC to 474-491 AD | 2747 | Arelate, Rome, Ticinum, uncertain western, Siscia, Constantinople, Nicomedia, Cyzicus, Thessalonica, Antioch, Alexandria, uncertain eastern, Axum, local imitations | Includes 1 coin each from the $4^{\text {th }}$ century BC (Neandria); $2^{\text {nd }}$ century BC (Side); 3 coins from the $2^{\text {nd }}$ to $1^{\text {st }}$ century BC (Uncertain Seleucid, Judaea, Alexandria); 3 from the $2^{\text {nd }}$ century AD (Alexandria); 4 from the $3^{\text {rd }}$ century AD (1 from Rome); most of the coins span the entire $4^{\text {th }}$ and $5^{\text {th }}$ centuries |
| Egypt $2^{\text {ix }}$ | 324-ca. 480 AD | 43 | Includes Antioch | Includes Constantinian imitation; 14 uncertain |
| Egypt 3 ${ }^{\text {x }}$ | 324-ca. 480 AD | ca. 943 | Not published | ca. 500 uncertain |
| Egypt $4^{\text {xi }}$ | 324-ca. 480 AD | 339 | Not published | 167 uncertain |
| Abu Mina, Egypt ${ }^{\text {xii }}$ | $1^{\text {st }}-2^{\text {nd }}$ century AD coin; antoninianus of Gallienus; then continuous from ca. 324-498 AD | ca. $8600$ | Alexandria | Found in pilgrim flask in a crypt under the altar of a church as a votive deposit. Includes "many good imitations" |
| Northern Syria $1976{ }^{\text {xiii }}$ | $\begin{aligned} & 335-337 \text { to } \\ & 474-491 \mathrm{AD} \end{aligned}$ | 2430 | Rome (Valentinian III, Majorian, Libius Severus), Mediolanum (Odavacar), Thessalonica, Heraclea, Constantinople, Nicomedia, Cyzicus, Siscia, Antioch, Alexandria, uncertain eastern | Includes over 300 coins of Zeno and 36 "forgeries" (local imitations) |


| Hama, Syria ${ }^{\text {xiv }}$ | $\begin{aligned} & \text { ca. } 320-\text { ca. } 470 \\ & \text { AD } \end{aligned}$ | 904 | Eastern mints only: Aquileia, Thessalonica, Constantinople, Nicomedia, Cyzicus, Antioch | 815 uncertain |
| :---: | :---: | :---: | :---: | :---: |
| "Beirut," <br> Lebanon ${ }^{\text {kv }}$ | $\begin{aligned} & \text { ca. } 320-\text { ca. } 490 \\ & \text { AD } \end{aligned}$ | 2377 | Rome (Valentinian III, Libius Severus), Siscia, Thessalonica, Heraclea, Constantinople, Cyzicus, Nicomedia, Antioch, Alexandria | Almost half from uncertain mint |
| $\begin{array}{\|l\|} \hline \text { "Lebanon" } \\ \text { 1988xi } \end{array}$ | Greek-ca. 490 AD (continuous from ca. 320 AD ) | 9530 | Includes Constantinople, Nicomedia, Cyzicus, Antioch, uncertain western mint for Valentinian III, Libius Severus | Includes 18 Greek and three $3^{\text {rd }}$-century, copies of Theodosius II monograms, "late Victories," 874 fragments, 237 barbarous, 4381 uncertain |
| Beirut Souks Hoard 4, <br> Lebanon ${ }^{\text {xyii }}$ | $\begin{array}{\|l} \text { 457-474 AD (all } \\ \text { coins of Leo I) } \end{array}$ | 8 | Uncertain eastern | 2 cast blanks, 2 illegible |
| Beirut Souks Hoard 5, Lebanon ${ }^{\text {xvii }}$ | 348-498 AD | 32 | 1 Rome?, all others illegible | 21 illegible |
| Tel Malot, Israel ${ }^{\text {xix }}$ | $\begin{aligned} & 4^{\text {th }} \text { century } \mathrm{BC} \text { to } \\ & 540 \mathrm{AD} \text { ? } \end{aligned}$ | $\begin{aligned} & \mathrm{ca.} \\ & 26,000 \end{aligned}$ |  | Not fully processed or published; found in a Gaza jar; included Persian, Hellenistic, Hasmonaean, Nabataean, Roman Provincial, Roman Imperial coins; note that hoard included over 5,700 $5^{\text {th }}$-century coins, and only one 527-565 AD (Justinian I). This coin matches the date of the jar, but Bijovsky urges caution in making it the closing date. |
| Ashkelon, ${ }^{\text {xx }}$ Semadar Hotel, Hoard A, Israel | 341-491 AD | 35 | Rome?, Siscia, Nicomedia, Constantinople | In cloth bag; foundation deposit for private dwelling? |
| Caesarea <br> Maritima baths <br> (Insula W2S3), <br> Israel ${ }^{\text {xxi }}$ | 350-457 AD | 106 | Not published | In fill of pit, mostly $4^{\text {th }}$-century coins |
| Haft-tapeh, Israel ${ }^{\text {xxi }}$ | $\begin{aligned} & \text { ca. } 320-\text { ca. } 476 \\ & \mathrm{AD} \end{aligned}$ | 86 | 2 Cyzicus | 49 uncertain |
| Taburabat, Turkey ${ }^{\text {xxii }}$ | ca. 320-457 AD | 3381 | Rome (Urbs Roma Felix), Siscia, Thessalonica, Heraclea, Constantinople, Nicomedia, Cyzicus, Antioch, Alexandria | 1 Victory l. imitation?; 3333 uncertain |
| Turkey ${ }^{\text {xxiv }}$ | ca. 330-ca. 465 AD | 83 | Not published | 18 uncertain |
| Corinth III, Greece ${ }^{\mathrm{xxv}}$ | 324-498 AD | 169 | Not published | 114 uncertain |
| Corinth 1930 near "Justinian's" Wall ${ }^{\text {xxvi }}$ | $\begin{aligned} & \text { Classical?-498 } \\ & \text { AD } \end{aligned}$ | 742 | Not published | 336 legible; 1 clipped coin from Messane ("old Greek"); 1 imperial aes, quartered; 1 Claudius II; 1 Constans, 1 Valens, 21 Theodosius I, 1 Honorius, 7 Arcadius, 28 Theodosius II, 15 Marcian, 32 Leo, 38 Zeno; 40 Victory dragging captive or Victory with wreath, emperor standing, camp-gate; 148 Anastasius I; 1 Baduila considered intrusive |
| Volo, Greece ${ }^{\text {xxvii }}$ | Greek-ca. 480 AD | 2231 | Rome, Thessalonica, Constantinople, Nicomedia, Cyzicus, Antioch | 1 Philip II; 13 Constantinian (1 Divus Constantine, the rest Fel Temp Reparatio or Spes Reipublice); 1 Constantius Gallus; 1167 illegible and "disregarded," all 187 AE3s clipped; 62 barbarous, including some from west |
| "Yale" Hoard (Balkans?) ${ }^{\text {xxviii }}$ | $\begin{aligned} & \text { ca. } 320-\mathrm{ca} .480 \\ & \mathrm{AD} \end{aligned}$ | 928 | Rome, Thessalonica, Heraclea, Constantinople, Nicomedia, Cyzicus, Antioch, Alexandria | 173 AE3, all clipped; 338 AE4 clipped; 84 barbarous AE4; 413 illegible |

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Kent 1994, p. cxlvi.
    Noeske 2000, pp. 222-27.
    Noeske 2000, pp. 291-93.
    Noeske 2000, pp. 337-39.
    Noeske 2000, pp. 337-39.
    Noeske 2000, pp. 343-44.
    Noeske 2000, pp. 343-44.
    Noeske 2000, pp. 365-82.
    Kent 1994, p. cxxxviii.
    Kent 1994, p. cxxxviii.
    Kent 1994, pp.cxxxviii-cxxxix.
    Noeske 2000, pp. 16-57.
    Noeske 2000, pp. 508-16.
    Kent 1994, p. cxliii.
    Kent 1994, p. cxxxi.
    Kent 1994, p. cxlviii.
    Butcher 2001/2, p. }281
    Butcher 2001/2, pp. 281-83.
    Kindler 2000; Bijovsky 2011, p. 83; Bijovsky 2012, p. }74
    Bijovsky }2004
    Preliminary report only available, Bijovsky 2011, p. }97
    Kent 1994, p. cxliii.
    Kent 1994, p.clx.
    Kent 1994, p. clxiii.
    Kent 1994, p. cxxxvi.
    Edwards 1937, pp. 248-49.
    Adelson and Kustas }1962
    lugio Adelson and Kustas 1962.
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## APPENDICES

## Appendix 1 <br> Countermarks

The excavation coins from the Hellenistic through the Roman Imperial period can carry countermarks. It has been suggested that these small stamps are used to revalue the denomination of the coin, to reassure the user of the value of the coin (sometimes due to wear), or to mark an assurance of continued validity even if the coin is from another city or a disgraced ruler. The countermark may imply that the coin had passed through the mint at a moment of payment of taxes, or perhaps payment of wages or donatives. ${ }^{1}$ However, no ancient author mentions the process of countermarking; we are thus never entirely sure why particular coins were marked, if they were recalled to be marked, or if the mint profited by the countermarking. ${ }^{2}$

## Lydian "Banker's Marks"

Countermarks, or banker's marks, have been found on electrum coins that had been minted in Sardis in a hoard at Gordion. ${ }^{3}$ It has been suggested that these early countermarks, which can number more than ten on one coin, were stamps given by particular bankers or moneylenders to show that the coin was of the correct weight and or alloy. ${ }^{4}$ No countermarks were stamped into the Lydian coins found in the excavations at Sardis.

## Hellenistic City Countermarks

The common owl countermark was placed on coins of Pergamum by the Pergamene mint. The type, which is found in both of its forms (with wings folded and wings outstretched), is found in a variety of sizes, suggesting either a series or a long period of countermarking. ${ }^{5}$

[^87]The countermark of the owl with wings outstretched, found on coin no. 24.2, obscures the entire reverse. ${ }^{6}$ The underlying coins can only then be roughly dated to 281-133 BC, but the countermark may date to the second century BC, when the owl type was introduced in the Pergamene mint. By countermarking the coin this way, the coin was "turned into" a coin with the types Athena/owl with wings outspread; ${ }^{7}$ this was perhaps a way of revaluing the coins since the coin with the types Athena/owl with wings outspread are slightly smaller than the Athena/countermark coins. A larger countermark accomplishes the same thing on coin no. 24.1, though the owl has its wings folded. The result is close to, but does not exactly imitate, coins of Pergamum with an owl in an olive wreath or sitting on a thunderbolt; ${ }^{8}$ it was probably placed on the reverses in the second or first centuries BC. The same date for the smaller countermark of an owl with wings folded can be surmised (nos. 25.1, 25.2). This countermark is found on larger coins of the Asklepios/ staff or Asklepios type. The largest coin (Athena/ trophy) carries the smallest countermark, though it retains the owl with wings folded (no. 27.4).

The most common countermark on the excavation coins is the knobby club countermark, found chiefly on the Herakles/Apollo civic bronzes minted in the third to second centuries BC (nos. 52.33-46, 100-104) and the slightly larger coin showing Tyche/Zeus Lydios (nos. 51.2, 51.5). The club is placed in an oval punch; the countermark is never found directly over the face of the deity on the obverse. It is occasionally combined with a second countermark, which should suggest that these other countermarks were also placed on the

[^88]Table App. 1.1 Countermarks on Hellenistic coins.

| Countermark | Obv. or Rev. | Date and Mint of Coin | Date and Mint of Countermark | Reference | Cat. No. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Owl with wings outstretched, facing, $8-10 \mathrm{~mm}$ circle | R | $\begin{aligned} & \text { 281-133 BC } \\ & \text { Pergamum } \end{aligned}$ | Possibly $2^{\text {nd }}-1^{\text {st }}$ century BC Pergamum | cf. SNG <br> France 5:1695 | $\begin{array}{\|l\|l\|} \mathbf{2 4 . 1} \\ 24.2 \end{array}$ |
| Owl with wings folded, r., head facing, $7-8 \mathrm{~mm}$ circle | R | $\begin{aligned} & 133-27 \text { BC or } 197-159 \text { BC } \\ & \text { Pergamum } \end{aligned}$ | Possibly $2^{\text {nd }}-1^{\text {st }}$ century BC Pergamum |  | $\begin{array}{\|l\|l\|} \hline 25.1 \\ 25.2 \end{array}$ |
| Owl with wings folded, r., head facing, 5 mm circle | R | $\begin{aligned} & 133-27 \text { BC or } 159-133 \text { BC } \\ & \text { Pergamum } \end{aligned}$ | Possibly $2^{\text {nd }}-1^{\text {st }}$ century BC Pergamum |  | 27.4 |
| Knobby club, 3 by 5-7 mm oval | O | $240 / 220-2^{\text {nd }} \text { century BC }$ <br> Sardis | $2^{\text {nd }}$ century BC? <br> Sardis | $\begin{aligned} & \text { cf. M7 GR } \\ & 208,216,233 \end{aligned}$ | $\begin{aligned} & \text { 51.2,5; 52.33-46, } \\ & 100-104 ; 94.6 \end{aligned}$ |
| Male head?, 4 by 4 mm square | O | $\text { 240/220-2 } 2^{\text {nd }} \text { century } B C$ <br> Sardis | Uncertain |  | 52.41, 52.46 (second countermark), 52.99 (second countermark) |
| 6 mm circle | O | $2^{\text {nd }}-1^{\text {st }} \text { century BC }$ <br> Sardis | Uncertain Sardis? | As M7 GR 182, but the l. side is cut off | 54.1 |
| [...]TVS in 5 by 6 rectangle | Uncertain | $3^{\text {rd }}-1^{\text {st }}$ century BC uncertain | Uncertain |  | 94.82 |
| Unbearded male bust r., dr. between V $\Lambda$-VP (2x) | Uncertain | $1^{\text {st }}$ century BC- $1^{\text {st }}$ century AD uncertain | Uncertain |  | 95.9 |

coin at the Sardis mint, as it is unlikely that the coin would be minted in Sardis, countermarked in Sardis, move to a second city to be countermarked, and then return to a deposit in Sardis (nos. 52.46, 52.99). The club countermark was likely placed on the Herakles/ Apollo coin when the new, slightly smaller Apollo/ club coin was minted in the second century BC, to show viewers that both coins were of the same value. Since we do not have any archaeological contexts that date the Apollo/club coins with any specificity, I can only suggest that the change in coinage may have occurred in 189 or 133 BC.

Two more countermarks were found on coins excavated in Sardis and produced by the Sardis mint. One is a male head in a square; it is only found on Herakles/Apollo coins (once without the club countermark, nos. 52.41, 52.46, 52.99). It is likely that this was also placed on the coin by the Sardis mint, perhaps when the club countermark was being used. The second is a monogram found on a Herakles/lion coin (no. 54.1), which I suggested was coined in the second or first century BC. It is possible that this is an Early Imperial countermark.

The last two countermarks in Table App. 1.1, [...] TVS and male bust between letters, may have been added to the coins in the Imperial period, as it is very likely that Hellenistic coins were still available and in circulation. The coins on which they are placed are today unrecognizable, and so we do not know where or when the countermarks were made.

## Seleucid Countermarks

The elephant head countermark is found on a smaller denomination minted in in the third century BC in Sardis or Smyrna. Hoover suggested that the mark was military in origin and "may have been applied at Smyrna," as this mint had produced a coin with an elephant reverse. ${ }^{9}$ He later expanded his argument to note that the elephant type was "tentatively attributed" by Newell to Smyrna; ${ }^{10}$ it referred to Antiochus' victory over the Galatians "who had targeted Smyrna," a victory that was partially achieved by using elephants. Thus, Hoover believed

9 Houghton and Lorber 2002, I: 121-22.
10 WSM 1495.

Table App. 1.2 Countermarks on Seleucid coins.

| Countermark | Obv. or <br> Rev. | Date and Mint of Coin | Date and Mint of <br> Countermark | Reference | Cat. No. |
| :--- | :--- | :--- | :--- | :--- | :--- |
| Elephant head in 4 mm <br> circle | R | $280-261$ BC <br> Sardis or Smyrna | $2^{\text {nd }}$ century BC? <br> Sardis? | Houghton and Lorber 2002, II: <br> 51 no. 25 | 72.2 |
| Horse-head, $5-6 \mathrm{~mm}$ <br> circle | R | 220-214 BC <br> Sardis | ca. 213 BC <br> Sardis | Mørkholm 1991, p. 126; <br> Houghton and Lorber 2002, II: <br> 65; cf. M7 GR 373, 380 | 84.1 <br> $\mathbf{8 5 . 1}$ |

the countermark was produced with payment to the army in mind. ${ }^{11}$

A horse-head countermark is normally placed on the reverses of Achaeus' Apollo/eagle bronzes. Mørkholm suggested that they were placed on the coins in Sardis as Achaeus wanted to "increase their nominal value" when the city was under siege. ${ }^{12}$ Achaeus only minted in Sardis, and his tetradrachms do carry the horse head as a symbol within the type of striding Athena. In this, he used a symbol common on Seleucid coins since the time of the founder of the dynasty. While Hoover was willing to entertain Mørkholm's suggestion, he also proposed that Antiochus III countermarked the coins when he retook the city. Antiochus, who may have already struck small bronzes as sitarchia to pay for his troops in the camp (see Section 2.2.1), needed small change in the city immediately after the siege. It is preferable to think that he used the already-minted coins of Achaeus as a stopgap measure until his own mint could restart production of bronze coins. As Hoover points out, the overstriking of small bronzes of Antioch show that the Sardis mint was under pressure to produce coins. ${ }^{13}$

## Roman Imperial Countermarks

Although Roman Provincial coins were certainly countermarked in the first and second centuries, it appears that the most intensive countermarking was done in the third century. Usually a mint countermarked coins of its own production, or at least those circulating within the city, but occasionally, inactive mints countermarked circulating coins. ${ }^{14}$

[^89]As Johnston pointed out, coins from outside the city comprised $25-50 \%$ of Imperial coins reported from excavations; these were available for countermarking when the need arose. ${ }^{15}$

There are no countermarks known from Sardis excavation coins of legionary detachments, nor of the Roman governor, other likely sources of countermarks. The latter, though reported in museum collections or in trade, was not found on any excavated coins in Sardis. ${ }^{16}$

Although it appears that there are local reasons for countermarking-by looking at the table, one might suggest that heavily-worn coins could be countermarked for continued use-there are also broader reasons for countermarking coins, such as the commemoration of an imperial visit, a victory, change in title, or the death of a (disgraced) emperor. ${ }^{17}$ Sometimes countermarks clearly revalue coins, especially when they are Greek letters showing the new value. But the reasons for countermarking are not always clear.

The clearest reason for countermarking is seen in the CAP $\Gamma$ and CAP $\Delta$ countermarks, which are used to revalue the coin or confirm a worn coin's value. This practice occured when the Roman systems of denominations were introduced, but they are most common in the third century. ${ }^{18}$ Christopher Howgego suggested that the CAP B, САР Г, and CAP $\Delta$ countermarks were put on foreign coins (i.e., not from the Sardis mint, unless they were completely worn) and were used by the Sardis mint soon after 260 AD , after the mint was shut. The numbers show the 2 -, 3 -, or 4 -assaria value of the coins. Johnston

Table App. 1.3 Countermarks on Roman Provincial coins.

| Countermark | Obv. or Rev. | Date and Mint of Coin | Date and Mint of Countermark | Reference | Cat. <br> No. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Aphrodite Anaitis?, 6 mm oval | O | $\begin{aligned} & \text { 139-161 AD } \\ & \text { Anchialos, Thrace } \end{aligned}$ | ca. 200? | GIC no. 233? | 97.1 |
| 5 mm circle | O | 29-18 BC "Asia" |  | RPC not, GIC not | 98.7 |
| Illegible, circle | Uncertain | 29-18 BC "Asia" |  |  | 98.9 |
| Julia Domna bust in beaded border, 10 mm circle | O (over face) | $\begin{aligned} & 145-161 \mathrm{AD} \\ & \text { Sardis } \end{aligned}$ | ca. 200? Sardis? | GIC not | 172.2 |
| Illegible, in uncertain shape | O | 140-160 AD Sardis | Sardis? |  | 184.3 |
| Male advancing l. (Marsyas?), $5 \times 7$ rounded rectangle | O | $\begin{aligned} & \text { 161-169 AD } \\ & \text { Pompeiopolis (Soli) } \end{aligned}$ | Late Antonine/Severan? Uncertain city of origin |  | 215.1 |
| Tyche? Standing, facing r., $7 \times 4 \mathrm{~mm}$ rectangle | O | 27 BC-AD 68 Uncertain mint | Uncertain date <br> Uncertain city of origin | GIC not | 219.2 |
| CAP <br> - $\Gamma \cdot, 8 \mathrm{~mm}$ circle, with second smaller circle of illegible type | O | 68-96 AD <br> Uncertain mint; Sardis? | 250s (Johnston 2007, p. 20) or soon after 260 (GIC) Sardis | $\begin{aligned} & \text { GIC no. 560, M7 GR } \\ & 398 \end{aligned}$ | 220.1 |
| CAP <br> - $\Delta \cdot, 13 \mathrm{~mm}$ circle | O | 117-138 AD <br> Uncertain mint | ca. 260 (Johnston 2007, p. 20) or soon after 260 (GIC) Sardis | GIC no. 561 | 228.1 |
| 9 mm circle | O | $200-250 \mathrm{AD}$ <br> Ephesus? | Uncertain date Uncertain city of origin | GIC not | 229.1 |
| Illegible, $5 \times 5$ square | O (over face) | 161-175 AD Sardis |  |  | 223.1 |
| 1. Jug and knife?, $3 \times 7 \mathrm{~mm}$ rectangle <br> 2. Nike l. in rectangle punch <br> 3. Object, 5 mm circle <br> 4. Lyre, $5 \times 7$ oval <br> 5. Note that opposite side has crescent-shaped countermarks (no types?) | Uncertain | $1^{\text {st }}$ to $3^{\text {rd }}$ century AD Uncertain mint | Uncertain date(s) Uncertain city or cities of origin (no. 4 from Mytilene?) | 2. cf. GIC no. 264 <br> 4. GIC no. 421? | 230.46 |
| 8 mm circle | Uncertain | $1^{\text {st }}$ to $3^{\text {rd }}$ century AD Uncertain mint |  | M7, p. 72 no. e | 230.41 |
| Emperor head r., 6 mm circle | Uncertain | $1^{\text {st }}$ to $3^{\text {rd }}$ century AD Uncertain mint |  | cf. GIC no. 53ff | 230.36 |
| Illegible, $5 \times 7$ rectangle | O | $1^{\text {st }}$ to $3^{\text {rd }}$ century AD Uncertain mint |  |  | 230.81 |
| Illegible (letters?) in $2 \times 8 \mathrm{~mm}$ rectangle | R | $1^{\text {st }} \text { to } 3^{\text {rd }} \text { century } \mathrm{AD}$ <br> Uncertain mint |  |  | 230.17 |
| Illegible, oval | O | 80-100 AD? Sardis |  |  | 169.1 |
| Illegible, 6-8 mm circle | Uncertain | $1^{\text {st }}$ to $3^{\text {rd }}$ century AD Uncertain mint |  |  | $\begin{aligned} & 230.3 \\ & 230.52 \\ & \hline \end{aligned}$ |
| Illegible, $2 \times 5 \mathrm{~mm}$ rectangle | Uncertain | $1^{\text {st }}$ to $3^{\text {rd }}$ century AD Uncertain mint |  |  | 230.43 |
| Illegible, $4 \times 10 \mathrm{~mm}$ rectangle | Uncertain | $1^{\text {st }}$ to $3^{\text {rd }}$ century AD Uncertain mint |  |  | 230.6 |
| (twice, once faintly and almost off flan) laur. bust of [young beardless male] r., to l. VA?, to r. CVP $\triangle$ in circle 28 mm | Uncertain | $\begin{aligned} & 1^{\text {st }} \text { century } \mathrm{BC} \text { to } \\ & 1^{\text {st }} \text { century } \mathrm{AD} \\ & \text { Uncertain mint } \end{aligned}$ | Johnston in M7, p. 72 suggested ca. 255 Sardis | Johnston 2007, p. 95 cited as having 2 countermarks, one CAP $\Delta$ and one GIC 36 (Smyrna "probably with $\Gamma$ on reverse") | 95.9 |

dated the first two to a "slightly earlier" period, but as Howgego points out, she did not have access to a later coin bearing one of these marks. ${ }^{19}$ However, the countermarks do show the number of coins circulating in Sardis in the third century that were not from the Sardis mint, though the coins predominantly came from the Ephesus mint. ${ }^{20}$

In Johnston's study of value marks added through countermarks, she confirmed that the CAP B, CAP $\Gamma$, and CAP $\Delta$ countermarks were added to very worn coins or "foreign" coins circulating in Sardis, most of them from the province of Asia. ${ }^{21}$ The CAP $\Gamma$ marks, she reiterated, were struck in 255-260, as "modules were shrinking and face values were being raised in Pamphylia and Cilicia." ${ }^{22}$ Although the module was not changing in Sardis at this point, she argued that "foreign" coins which were "especially ambiguous in local terms-on account of their types or size or degree of wear," were chosen by the mint for countermarking. ${ }^{23}$ I suggest that the mint for coin no. 220.1, with a CAP Г countermark was Sardis, but the reverse was worn completely smooth. Due to the traces of the bust on the obverse, I also suggest that the coin dates to the Flavian period; this shows how long coins remained in circulation. Its size ( 28 mm and 8.42 g ) places it within the module for a 3 -assaria coin in the 250 s, ${ }^{24}$ which is what the mark of $\Gamma$ confirms.

Some of the CAP $\Delta$ countermarks can be seen to have a dash (thus, CAP $\Delta$-), which Howgego read as $41 / 2 .^{25}$ Johnston preferred to read this as only signifying that the letter was not part of the word "Sardineion," but that the letter referred to the numerical value of four. She noted that the coin that Howgego called later than 260 was "erroneously attributed to Gordian III," but it should be given to Gallienus, restoring her theory on the date of the countermark. ${ }^{26}$ Two coins from the excavation have this countermark, one of
them known to her (no. 95.9). This coin also carries a countermark probably applied at Smyrna. ${ }^{27}$ It is too worn for identification of the types or mint; its module ( $29 \mathrm{~mm}, 9.51 \mathrm{~g}$ ) would appear to place it in the 3 -assaria denomination in the 250 s for Sardis, ${ }^{28}$ but the mark shows perhaps that the mint was revaluing the coin at 4 -assaria, which may argue for the later date. It is likely that the 3 -assaria mark used by Smyrna was an earlier revaluation, and the Sardian mint officials used the CAP $\Delta$ mark, at least in this case, to revalue the coin.

The second coin to carry the CAP $\Delta$ countermark, unknown to Johnston, is a coin from an uncertain mint, dating to the Hadrianic period (no. 228.1). This coin, at 35 mm and 20.32 g , clearly falls intoor actually exceeds-the 4 -assaria module for the 250s and perhaps shows the reluctance of the mint to re-melt the old coins if the mint could more easily substitute a countermark.

Howgego's number 36, as noted above, is found on one coin from Sardis (no. 95.9). This was another countermark, probably by the city of Smyrna, used on worn flans to revalue the coins in the third century. Usually this countermark is combined with an obverse countermark with the letters CVMP and a male head r.; Johnston suggested Elagabalus or Severus Alexander. She concluded that the mark must have been used between 218 and 235, marking large flans as 3 -assaria. ${ }^{29}$ As was noted above, the earlier date of this countermark allows us to see a change in the valuation of flans from ca. 235 to 260 , as the value changed from 3- to 4 -assaria in these two closelyrelated cities.

[^90]```
Howgego 1985, no. 36, see below.
See Johnston 2007, Table 2.
Johnston 2007, p. }96
```


## Appendix 2

## Monograms and Control Marks

Icannot claim to have made an exhaustive search for the monograms, but have consulted the SNG online database (smaller collections in the UK), the British Museum catalogs, SNG Cop, SNG vAulock, SNG Tübingen, SNG Munich, SNG France
(Mysia), Weber Collection, Fitzwilliam Collection, Hunterian Collection, and the online images for the American Numismatic Society, Boston Museum of Fine Arts, Princeton University, Harvard University Art Museums, and Yale University.

Table App. 2.1 Monograms on Hellenistic Coins.

| Monogram | Cat. No. | Reference |
| :---: | :---: | :---: |
| $\Omega$ | 9.1 | Lysimachus, Thrace. Athena/forepart of lion. Monograms are common on this series. cf. BMC Tauric Chersonese, p. 195, no. 1? (on a different bronze denomination of Lysimachus). |
| $\gamma$ | 9.3 | As above. No published parallel for this monogram? |
|  | 9.6 | As above. No published parallel for this monogram? |
|  | 10.1 | Demetrius II, Macedon. Macedonian shield, monogram as boss/Macedonian helmet: always found on this series. |
|  | 19.1 | Bithynia, for Papirius Carbo. Dionysos/thyrsus. No published parallel for this monogram? |
|  | 23.1 | Attalus II, Pergamum. Athena/coiled serpent. No published parallel for this monogram? |
| $M$ | 23.2 | As above. As M7 GR 37. |
| $\pi$ | 23.3 | As above. As SNG Tübingen 4, monogram 35, but on Asklepios/snake around omphalos. |
|  | 26.1, 26.2 | Pergamum. Asklepios/snake around omphalos. No monogram noted in catalogs, but found in trade. |
| $Q$ | 28.1 | Pergamum. Athena/owl on palm branch, under r. wing; monogram under l. wing obscure. No published parallel for this monogram? |
|  | 28.2 | Pergamum. Athena/owl facing. As BMC Mysia, p. 133, no. 204. |
| $\emptyset$ | 30.1 | Cyme. Forepart of horse/cup. Monograms are common on this series. No published parallel for this monogram? |
| $M P$ | 44.1 | Smyrna. Cybele/tripod. Milne 1923, no. 34 suggested this monogram was for a magistrate named Pyrrhos. |
| $\angle$ | 52.1 | Sardis. Herakles/Apollo. Monograms are common for this series; in 1981, Johnston knew of more than 70 monograms or names (M7, p. 80). |
| $M$ | 52.2 | As above. Same as 52.7? |
|  | 52.3 | As above. Bell 1916, no. 245. |


| $A$ | 52.4 | As above. As SNG Ashmolean V, monogram 25. |
| :---: | :---: | :---: |
| $0$ | 52.5 | As above. |
| $M$ | 52.6 | As above. Probably as Bell 1916, no. 240. |
|  | 52.7 | As above. |
|  | 52.8 | As above. |
|  | 52.9 | As above. As SNG Cop, monogram 28. |
|  | $\begin{aligned} & \text { 52.10, } 52.11 \\ & 52.12 \end{aligned}$ | As above. cf. SNG Munich, monogram 33. |
|  | 52.13 | As above. |
|  | 52.15 | As above. |
| $81$ | 52.16 | As above. cf. Fitzwilliam, McClean Collection, no. 8709, for Apollo/club. |
|  | $\begin{aligned} & 52.17 \\ & 52.18 \end{aligned}$ | As above. |
|  | 52.19 | As above. |
|  | 52.20 | As above. |
|  | 52.21 | As above. |
| $\mathrm{C} \Omega$ | $\begin{aligned} & 52.22,52.23 \\ & 52.24,52.25 \end{aligned}$ | As above. As M7 GR 212; BMC Lydia, p. 239, no. 22. This is, by far, the most common monogram found on these coins. It may show either a very large issue, or more than one moneyer using these letters. |
|  | 52.26 | As above. As M7 GR 214. |
| T (obscure) | 52.27 | As above. Entire monogram not legible. |
| F | 52.32 | As above. As BMC Lydia, p. 240, no. 36; compare Bell 1916, no. 250; M13, no. 52.29 |
|  | 53.1 | Sardis. Dionysos/forepart of lion. As BMC Lydia, p. 241, no. 47; M7 GR 241; Bell 1916, no. 261. |
| $A$ | 55.1 | Sardis. Apollo/club. Monograms are almost always found on this series (see M7, p. 80, where Johnston knew of "over sixty"). |
| $ゆ$ | 55.2 | As above. |
|  | 55.3 | As above. As M7 GR 195. |
| , | 55.4 | As above. |
|  | 55.5 | As above, see SNG Ashmolean V, monogram 11. |


|  | 55.6 | As above. As BMC Lydia, p. 238, no. 12. |
| :--- | :--- | :--- |
|  | 55.7 | As above. As SNG Tübingen, monogram 18. |
|  | 55 | 55.9 |

Table App. 2.2 Seleucid Control Marks.

| Monogram | Cat. No. | Reference |
| :---: | :---: | :---: |
| First between hind legs, second below belly | 71.1 | Seleucus I, Sardis. Medusa/bull butting r. As Houghton and Lorber 2002, no. 151(2)b. |
| To l. A, above M, to r. $\Delta \mathrm{I}$ | 73.1 | Antiochus II, Sardis. Apollo/tripod. As Houghton and Lorber 2002, no. 520(3), which does not record the M. |
| Outer 1. $\Sigma$, outer r. $\Delta \mathrm{I}$, below, anchor r . | 74.1 | As above. As Houghton and Lorber 2002, no. 522(2). |
| Outer l., with anchor r. below | 75.1 | As above. As Houghton and Lorber 2002, no. 523(a). |
| Below anchor, to r . | 78.3 | Antiochus II, Sardis. Apollo/cithara. As Houghton and Lorber 2002, no. 528(3). |
| Outer 1. $\Sigma$ | 79.2 | Antiochus II, Sardis. Tyche/tripod. Not previously published. |
| Ko Mo | 81.1 | Seleucus II, Sardis. Athena/Apollo. As Houghton and Lorber 2002, no. 660(5), but outer r. illegible. |
| Below arrow (outer l.) | 82.1 | Seleucus II, Antioch? Athena/Apollo. Houghton and Lorber 2002 does not list this control mark. |
| Outer r. outer 1. is off flan | 84.1 | Achaeus, Sardis. Apollo/eagle. Houghton and Lorber 2002 does not list this control mark, although cf. no. 955(2). |
| To r. $\Delta \mathrm{I}$ | 85.1 | As above. Houghton and Lorber 2002, no. 956. |
| $\triangle \omega$ | 87.1 | Antiochus III, Sardis. Apollo/elephant l. As Houghton and Lorber 2002, no. 981(1). |
| $\infty$ | 87.2 | As above. As Houghton and Lorber 2002, no. 981(2). |

Table App. 2.3 Late Roman Monograms.

| Monogram | Cat. No. | Reference |
| :---: | :---: | :---: |
|  | 911.1 | Theodosius II, RIC X type 5. |
|  | 968.2, 969.1-5 | Marcian, RIC X type 1. |
|  | 965.1-2, 966.1-5, 967.1-2, 968.3-4, 969.6-26 | Marcian, RIC X type 2. |
|  | 967.6 | Marcian, RIC X type 2, variant. |
| , | 967.3 | Marcian, RIC X type 3. |
| , | 967.4-5 | Marcian, RIC X type 4. |
| M | 966.6, 969.27-30 | Marcian, RIC X type 5. |
| S | 968.1 | Marcian, RIC X type 7. |
| $B R$ | 964.1 | Marcian, LRBC type 9. |
| $E$ | 976.1-5, 985.1-39 | Leo I, RIC X type 1. |
| 5 | 973.1-2, 976.6 | Leo I, RIC X type 4. |
|  | 985.42 | Leo I, RIC X type 5. |
|  | 982.1-3 | Leo I, RIC X type 6. |
|  | 989.1 | Libius Severus, RIC X type 1. |
|  | 990.1-2 | Odavacar, RIC X type 1. |
|  | 994.1-3, 997.1-54 | Zeno, RIC X type 1. |
|  | 995.1-2 | Zeno, RIC X type 4. |
|  | 997.55-58 | Zeno, RIC X type 5. |
|  | 996.1-5 | Zeno, RIC X type 10. |
|  | 995.3-7 | Zeno, RIC X type 13. |
|  | 995.8-21 | Zeno, RIC X type 14. |
|  | 991.1 | Basiliscus and Marcus, RIC X type 1. |
|  | 992.1-7 | Zenonis, RIC X type 1. |
|  | 1004.1-200 | Anastasius I (variations not given separate types). |

Table App. 2.4 Lead Seals.

| Monogram | Cat. No. | Description |
| :--- | :--- | :--- |
| R | L13 | Hatching shows area obscured by piercing: flip side is quadruped <br> Byzantine: 450-700? |

## Appendix 3

## Reverse Descriptions of Late Roman Bronzes

Modified from Carson, Hill, and Kent 1965, LRBC.
Table App. 3.1a Reverse types, 324-348 AD.

| Reverse Type | Description |
| :--- | :--- |
| Gloria Exercitus emperor <br> standing | Emperor standing l., head r., holding spear in r. and leaning on shield |
| Gloria Exercitus 1 standard | Two soldiers standing, each holding a spear and leaning on shield; between them, one standard |
| Gloria Exercitus 2 standards | Two soldiers standing, each holding a spear and leaning on shield; between them, two standards |
| Ivst Ven Mem | Aequitas standing l. holding balance and transverse scepter; paired with an obverse of veiled head r. <br> DVCONSTANTINVSPTAVG |
| Libertas Pvblica | Victory on galley, holding wreath in either hand |
| Pax Publica | Pax standing l. holding branch and transverse spear; paired with an obverse of bust of Helena <br> diademed; r. FLIVLHELENAEAVG |
| Providentiae Augg | Camp-gate with two towers, star above |
| Providentiae Caess | As above |
| Quadriga | Emperor in quadriga ascending r., above, hand of God, no legend; paired with an obverse of veiled <br> head r. DVCONSTANTINVSPTAVG |
| Securitas Reipublice | Securitas standing l. holding branch; paired with obverse of bust of Helena r. FL HELENA AVGVSTA |
| Victoriae dd Auggq nn | Two Victories standing face to face, each with a wreath |
| Victory on prow | Victory l. holding transverse scepter and shield, on prow; paired with obverse of helmeted head of <br> Constantinopolis l., scepter over shoulder CONSTANTINOPOLIS |
| Virtus Augusti | Emperor standing looking r., holding inverted spear in r. and resting l. hand on grounded shield |
| VN MR | Emperor standing r., veiled; paired with an obverse of veiled head r. DVCONSTANTINVSPTAVG |
| Vot Mult | Vot /XX /Mult /XXX in wreath |
| Vot XXX | Vot/XXX in wreath, DNCONSTANTINIMAXAVG around |
| Wolf and twins | Wolf, beneath twins, above, two stars; paired with an obverse of the helmeted head of Roma l. <br> VRBSROMA |

Table App. 3.1b Reverse types, 324-364 AD.

| Reverse Type | Description |
| :--- | :--- |
| Fel Temp Reparatio emperor and <br> captives | Emperor in armor moving l., holding labarum in r. and shield in 1.; in front are two kneeling <br> captives |
| Fel Temp Reparatio FH3 | Virtus with shield on 1. arm spearing fallen horseman, who raises l. arm |
| Fel Temp Reparatio FH4 | Virtus with shield on 1. arm spearing fallen horseman, who clutches horse's neck |
| Fel Temp Reparatio galley | Emperor stands on galley l., holding phoenix on globe in r. and labarum in l.; galley is steered <br> by Victory seated l. |
| Fel Temp Reparatio hut | Virtus moving r., head turned l., holds spear in l. and leads prisoner from hut beneath tree |
| Fel Temp Reparatio phoenix globe | Phoenix to r. on globe |
| Spes Reipublice | Virtus standing l., holds globe in r. and spear in l. |

Table App. 3.1c Reverse types, 364-450 AD.

| Reverse Type | Description |
| :---: | :---: |
| Concordia Agu | Two nimbate emperors facing, each with spear; between them they hold a long cross |
| Concordia Aug or Auggg cross | Latin cross surrounded by legend |
| Concordia Aug empress | Empress enthroned facing, star in 1. field |
| Concordia Aug Victory | Victory facing, holding wreath in each hand |
| Concordia Aug Victory 1. | Victory striding 1., holding wreath and palm |
| Concordia Auggg Cp or Concordia Augg Cp | Constantinopolis enthroned facing, helmeted head r., holds scepter in r. and globe in l., prow by r. foot |
| Concordia Augg Cp Victoriola | As above, but holds Victoriola instead of globe |
| Concordia Auggg Roma | Roma enthroned facing, helmeted head l., holds globe in r. and spear in 1., one leg bared |
| Concordia Auggg Roma 2 | As above, but globe in 1 . and spear in r. |
| Glor orvis terrar | Emperor standing facing, holds labarum in r . and globus cruciger (sic $L R B C$ ) in l.; star in l. field |
| Gloria Novi Saeculi | Emperor standing facing, head r., holds labarum in r. and rests l. on shield |
| Gloria Reipublice camp-gate | Camp-gate with two towers |
| Gloria Romanorum 8 | Emperor dragging captive r.; holds labarum in 1. hand (no cloak) |
| Gloria Romanorum 18 | Emperor standing facing, with globe in r . and labarum in 1. |
| Gloria Romanorum emperor galley | Emperor standing facing on galley, head 1., raises r. hand; Victory at helm |
| Gloria Romanorum emperor horseback | Emperor on horseback r., raising r. hand |
| Gloria Romanorum empress | Empress enthroned facing, crowned by hand of God; paired with bust of empress r., pd., crowned by Hand of God |
| Gloria Romanorum three emperors | Three facing emperors with spears in hand and resting hand on shield; middle emperor is smaller than the other two |
| Gloria Romanorum two emperors globe | Two facing emperors with spears in hand and holding between them a globe |
| Gloria Romanorum two emperors shield | Two facing emperors with spears, resting hands on shields |
| Reparatio Fel Temp | Emperor facing, head r., holds spear in r. and resting l. on shield |
| Restitutor Reip | Emperor facing, head r., holds standard in 1. hand and Victoriola in r. |
| Restitutor Reipublicae | As above |
| Salus Reipublicae | Victory moving l., holds palm in r. and dragging captive with 1. |
| Salus Reipublicae empress | Empress standing frontally, hands crossed on chest |
| Salus Reipublicae Victory seated | Victory seated r., writing on shield resting on small column |
| Salus Reipublicae Victory shield | Victory seated r. on cuirass, pointing to shield inscribed with chi-rho supported by small column; paired with bust of empress r., pd., crowned by hand of God |
| Salus Reipublice | Victory moving l., holds trophy in r. and dragging captive with 1.; chi-rho in l. field |
| Securitas Reipublicae | Victory rushing l. holds wreath in r. and palm over l. shoulder |
| Spes Romanorum camp-gate | Camp-gate with two towers, star above |
| Urbs Roma | Roma seated 1. holds spear in r. and Victoriola in 1., cuirass by feet |
| Urbs Roma Felix | Emperor standing facing, holds labarum in r. and Victoriola in 1. |
| Victoria Aug emperor | Emperor standing facing, holds globe in r. and spear in 1. |


| Victoria Augg or Victoria <br> Auggg | Victory striding l., holds wreath in r. and palm in l. |
| :--- | :--- |
| Victoria Augg captive | Victory striding l., holds trophy and drags captive |
| Victoria Augg emperor | Emperor standing facing, head l., holds Victoriola in r. and standard in 1. |
| Victoria Augg 2 Victories or <br> Victoria Auggg 2 Victories | Two Victories face to face, each elevating a wreath |
| Virtus Exerciti | Emperor moves r. holds standard in r. and globe in 1., spurning captive with foot |
| Virtus Exerciti 2 | Emperor facing, head r., holds spear in r. and places l. on shield; to r., Victory crowns him and <br> holds palm in l. |
| Vot V | Inscription in two lines in wreath |
| Vot X Mult XX | Inscription in four lines in wreath |
| Vot XV Mult XX | Inscription in four lines in wreath |
| Vot XX Mult XXX | Inscription in four lines in wreath |
| Vot XXXX | Inscription in two lines in wreath |
| VT XXX V | Inscription in three lines in wreath |

Table App. 3.1d Reverse types, 450-498 AD.

| Reverse Type | Description |
| :--- | :--- |
| Emperor and captive | No legend. Emperor standing facing, head l., holds in r. a long cross and places l. on head of <br> kneeling captive |
| Empress b/E | Empress standing facing, holds globus cruciger and transverse scepter b/E |
| Emperor cross and globe | Emperor standing facing, holds long cross in r. and globe in l. ZENO |
| Two enthroned emperors | Two nimbate emperors enthroned facing, between them a cross |
| Victoria Augg | Victory striding l., holds wreath in r. and palm in l. |

## Appendix 4 <br> Statistical Analysis Formulas

## Annual Average Coin Loss per Thousand

The AACL/1000 calculation has been used since the 1970s to try and provide a rough average of coins per reign found on excavations; by multiplying by 1000 ,
sites that have fewer coins can be compared to sites with larger numbers of coins (although see the caveat for the Chi-Square Goodness of Fit test) or shorter periods with longer periods. The equation is:

$$
\frac{\text { Total of coins in reign }}{\text { Years of reign }} \times \frac{1000}{\text { Total number of coins found on site }}=\text { AACL/1000 }
$$

Table App. 4.1 Periodization for AACL/1000 calculations.

| Period No. | Name of Period | Years in Period |
| :--- | :--- | :--- |
| 1 | Augustan, 27 BC-AD 14 | 41 |
| 2 | Julio-Claudian, 14-68 AD | 54 |
| 3 | Flavian, 69-96 AD | 27 |
| 4 | Nerva-Hadrianic, $96-138$ AD | 42 |
| 5 | Antonine, 138-192 AD | 54 |
| 6 | Severan, 193-238 AD | 45 |
| 7 | third century, 239-284 AD | 45 |
| 8 | Tetrarchic, 285-324 AD | 39 |
| 9 | Constantine-Julian II, 324-364 AD | 44 |
| 10 | Jovian-Valentinian II, 364-392 AD | 28 |
| 11 | Theodosius I-Theodosius II, 392-450 AD | 58 |
| 12 | Marcian-pre-reform of Anastasius I, 450-498 AD | 48 |
| 13 | Post-reform Anastasius I-Justin I, 498-527 AD | 29 |
| 14 | Justinian I, 527-565 AD | 38 |
| 15 | Justin II-Maurice, 565-602 AD | 37 |
| 16 | Phocas-Heraclius, 602-641 AD | 39 |
| 17 | Constans II-Constantine IV, 641-685 AD | 44 |

Comparative cities, sample size, and sources:
Amorium: $\mathrm{n}=728$, Katsari et al. 2012, but the sample of identified coins was so small that I eliminated this city from the calculations, as the sample would not have been valid in the Chi-square Goodness of Fit test.

Aphrodisias: $\mathrm{n}=246$, MacDonald 1976, through Tetrarchic only; the sample would also have been invalid in the Chi-square Goodness of Fit test, and so was not used.

Assos: $\mathrm{n}=270$, Bell 1902, an uncertain number of which were purchased, not excavated. No coins of the fifth century were published; the sample would have been invalid in the Chi-square Goodness of Fit test.

Athens: $\mathrm{n}=76,049$, Thompson 1954; Kroll 1993, Kroll noted that at least 4,000 were discarded as unidentifiable before he saw the coins.

Butrint: $\mathrm{n}=2,000$, Moorhead, Gjongecaj, and Abdy 2007, almost all from post-300 AD to the fifth and possibly the early sixth century (see Moorhead 2007, p. 287); there are no coins from the fifth century in the Chi-square Goodness of Fit test, since the numismatists could not identify the half-century from which the coins came, hence I had to eliminate them from the test. The raw data are found in Moorhead, Gjongecaj, and Abdy 2007 and Guest et al. 2004; these are interpreted in Moorhead 2007.

Caesarea Maritima: n = 8048, Evans 2007.
Corinth: $\mathrm{n}=51,652$, Harris (1941, p. 155) noted that over 50,000 coins had been found at Corinth by that date, 43,000 of which she had charted, but in large chronological spans, so I could not use all her data. Also note that since the numismatists did not often separate the pre-reform from post-reform Anastasian issues, the number for period 13 may be a little high (see also Edwards 1933; 1937; Harris 1941; Fisher 1984; Zervos 1986; MacIsaac 1987; Sanders 2002). N.B.: I did not comb each year's excavation reports in Hesperia; references to these may be found in Kremydi and Iakovidou 2015 (whose divisions were too broad for use in this study).

Ephesus: $\mathrm{n}=3198$, Vetters 1979; 1980; 1983; Karweise 1986; Schindel 2009.

Hierapolis: $\mathrm{n}=402$, Travaglini and Camillieri 2010, the sample would not have been valid under the Chi-square Goodness of Fit test, since so few coins were identifiable.

Kalenderhane Camii, Istanbul: $\mathrm{n}=441$, Hendy 2007, Late Roman and Byzantine only.

Kenchreai: $\mathrm{n}=574$, Hohlfelder 1978.
Pergamum: $\mathrm{n}=3,480$, Regling 1913; Voegtli 1984; Boehringer 1984; Voegtli et al. 1993.

Priene: $\mathrm{n}=1,460$, Regling 1927, but note no coins from the second half of the fifth century were reported.

Sagalassus: $\mathrm{n}=428$, Scheers 1993a; 1993b; 1995; Scheers et al. 1997; Scheers 2000. Larger totals are reported in Poblome 1995 and in Stroobants and Poblome 2015, but most coins are unpublished at this point; since the total was small, I eliminated this site from the calculations.

Sardis: $\mathrm{n}=23,000, \mathrm{M} 1, \mathrm{M} 7$, and this volume, all from database.

Side: $\mathrm{n}=127$, Atlan 1976, but the sample was so small that I eliminated this city from the calculations.

Tarsus: $\mathrm{n}=380$, Cox 1950, but the identifiable coins were so small that this site was eliminated from the calculations.

Zeugma: Frascone 2013; Butcher 2013. I did not use these coins in the calculations, since the thirdcentury sack of the city preserved far larger numbers of these coins than in other cities of the eastern Mediterranean, tremendously skewing the "normal" profile for the AACL/ 1000 of eastern cities.

## Chi-Square Goodness of Fit Test

The Chi-Square Goodness of Fit test is used to determine whether the sample data (in this case, the coins from the excavation) are consistent with a hypothesized distribution (if the sample reflects a standard number of coins from each period, which must substitute for the number of coins coming from the mint, a number that we will never know). The Chi-Square Goodness of Fit test can be used when the sample is a simple random sample, but if the expected frequency is below 1 or if the expected frequency is less than 5 in more than $20 \%$ of the cells, then the test is inappropriate. The equation for the Chi-Square Goodness of Fit test is:

$$
\chi^{2}=\sum_{i=1}^{r} \sum_{j=1}^{k} \frac{\left(O_{i j}-E_{i j}\right)^{2}}{E_{i j}}
$$

$O_{i j}$ is the observed value of cases categorized in row $i$ of column $j . E_{i j}$ is the number of cases expected
in $\mathrm{H}_{\mathrm{o}}$ (the null hypothesis) to be categorized in row $i$ of column $j$. The double sum (two sigmas) indicates that the sum is to be calculated over all the $r$ rows and the $k$ columns (i.e., over all the cells). The $E_{i j}$ is the expected frequency for each cell, which is calculated by multiplying the marginal row and the marginal column total common to a cell, and then dividing
that product by the grand total. The $O_{i j}$ is the observed frequency. The p-value, or calculated probability, is the probability of finding the observed results, when $\mathrm{H}_{\mathrm{o}}$ of the study is true. Generally, a p-value of less than $5 \%$ is thought to reflect the probability that the results are observable and thus valid.

Table App. 4.2a Chi-Square Goodness of Fit test results for "normal" cities, periods 1-8.

| Period No. | Sardis | Pergamum | Ephesus | Priene | Athens | Corinth | Kenchreai | Butrint | Caesarea <br> Maritima | $\Sigma_{j}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 1 | 96 | 63 | 31 | 14 | 2008 | 219 | 18 | 7 | 48 | 2504 |
| 2 | 95 | 16 | 14 | 10 | 122 | 486 | 38 | 4 | 102 | 887 |
| 3 | 49 | 3 | 10 | 28 | 41 | 137 | 10 | 1 | 21 | 300 |
| 4 | 82 | 69 | 32 | 47 | 1717 | 120 | 10 | 7 | 44 | 2128 |
| 5 | 68 | 50 | 34 | 9 | 3999 | 284 | 9 | 13 | 6 | 4472 |
| 6 | 135 | 46 | 77 | 26 | 186 | 319 | 12 | 4 | 30 | 835 |
| 7 | 384 | 168 | 133 | 100 | 1915 | 326 | 35 | 20 | 52 | 3133 |
| 8 | 241 | 101 | 25 | 12 | 417 | 181 | 22 | 8 | 53 | 1060 |
| $\Sigma_{i}$ | 1150 | 516 | 356 | 246 | 10405 | 2072 | 154 | 64 | 356 | 15319 |

The Chi-Square value is 5692.824 , with 56 degrees of freedom and a p-value of 0 , which means the differences between the groups is significant.

Table App. 4.2b Chi-Square Goodness of Fit test results for "normal" cities, periods 9-17.

| Period No. | Sardis | Pergamum | Ephesus | Priene | Athens | Corinth | Kenchreai | Butrint | Caesarea <br> Maritima | $\Sigma_{j}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 9 | 2267 | 184 | 239 | 177 | 4992 | 2224 | 99 | 4 | 379 | 10565 |
| 10 | 2157 | 48 | 193 | 69 | 3385 | 994 | 57 | 1 | 428 | 7332 |
| 11 | 1982 | 114 | 262 | 114 | 2166 | 2336 | 116 | 15 | 268 | 7373 |
| 12 | 992 | 5 | 149 | 0 | 837 | 269 | 27 | 13 | 289 | 2581 |
| 13 | 152 | 10 | 15 | 3 | 80 | 484 | 39 | 135 | 195 | 1113 |
| 14 | 308 | 26 | 105 | 21 | 276 | 134 | 48 | 18 | 106 | 1042 |
| 15 | 444 | 47 | 65 | 27 | 217 | 535 | 30 | 84 | 96 | 1545 |
| 16 | 340 | 25 | 6 | 21 | 280 | 165 | 2 | 51 | 101 | 991 |
| 17 | 107 | 125 | 0 | 9 | 847 | 55 | 2 | 120 | 11 | 1276 |
| $\Sigma_{i}$ | 8749 | 584 | 1034 | 441 | 13080 | 7196 | 420 | 441 | 1873 | 33818 |

The Chi-Square value is 7363.87, with 64 degrees of freedom; the p-value is 0 , which again means the differences between the groups is significant.

## Mean Coin Date

The calculation is: $\quad \mathrm{MCD}=\frac{\sum x_{i} f_{i}}{n}$
where the result is expressed as mean coin date (MCD); $x$ is the mean date of manufacture, $f$ the frequency within the deposit and $n$ the sample size.

The equation is adapted from Gerrard 1993. I thank Thomas M. Evans, who helped me with the statistical analysis.

## CATALOGUE OF THE COINS 1973-2013

## Lydian through Roman Coins (Seventh Century BC-330 AD)

All coins are bronze, unless specifically noted. Within mints, unless stated, dates are as above. An empty slot in the denominations column means that no denomination has been assigned to the coin. The specific entries list the die axis (when relevant), mintmark (when relevant), diameter, weight, and sector. $\mathrm{H} 1-\mathrm{H} 8$ designates that the coin belongs to one of the hoards discussed in Section 3.6. Bold numbers indicate the coin is included in the plates. Numbers in references refer to coin numbers, not page numbers. Standard abbreviations include:

| C/m | control mark | i.d. | identification | off. | officina |
| :--- | :--- | :--- | :--- | :--- | :--- |
| cm. | countermark | laur. | laureate | o/s | overstruck |
| cuir. | wearing cuirass | lig. | ligatured | pd. | pearl-diademed |
| ex. | exergue | mg. | monogram | rd. | rosette-diademed |
| gl. cr. | globus cruciger | $\mathrm{M} / \mathrm{m}$ | mintmark | var. | variant |
| helm. | helmeted | n.s. | not seen by the author |  |  |

## Lydian Royal Coinage

Alyattes?
Sardis
ca. 630-580/560 BC? EL trite (Lydo-Ionian standard) obv. Head of roaring lion $r$. with "nose wart" of multiple rays rev. Double punch incuse
SNG Turk 1: 1013; Weidauer 1975 type XVI; SNG vAulock 8: 2868-2870; Cahill et al., forthcoming

| $\mathbf{1 . 1}$ | $12 \times 9$ | 4.70 | (5 rays) | Ac-FT |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 . 2}$ | $13 \times 11$ | 4.75 | (5 rays) | Ac-FT |

Weidauer (1975) used lion heads on East Greek pottery to date coins by style and notes on pp. 103-4 that her type XVI must have been a larger series than the few surviving pieces would suggest, due to the few die links among the specimens known. Recent research dates the coins by the pottery from the Artemision at Ephesus; see Kerschner and Konuk, forthcoming. There are no die links between the Sardis coins and those illustrated by Weidauer. Trites of the same type are found in the Gordion 1963 Hoard, which Bellinger (1968,
pp. 12-13) dated to 625-610. See a new reconstruction of the date of Alyattes's coinage in Wallace 2016. For metallurgical analysis, see Cahill et al., forthcoming; both were found with no. $\mathbf{3 . 1}$ in a dump on the Acropolis.

## Croesus

561-547 BC Au 1/12th stater (heavy Croesid standard)
Forepart of roaring lion r . confronting bull head 1 .
Square incuse
SNG Munich 23: 9
$2.1 \quad 7 \times 6 \quad 0.89 \quad$ MMS
Konuk 2012, pp. 49-50; Naster's (1965) Massive Style; Carradice's (1987) Early Style; Nimchuck's (2000) Type B; somewhat worn or struck with worn die, details obscured. This coin was found in a recess of the Lydian fortification, beneath debris from the Persian sack of the city, see Cahill and Kroll 2005; analysis of the date of the sack of Sardis in Wallace 2016.

AR stater Hellenistic Coins
Forepart of roaring lion r. confronting bull head 1 .
Double punch incuse
SNG vAulock 8: 2873-2874; SNG Turk 1: 1018; Cahill et al., forthcoming
$3.1 \quad 21 \times 15 \quad 10.25$
Ac-FT

Naster's (1965) Forceful/Nervous Style; Carradice's (1987)
Early Style; Nimchuk's (2000) Type A; slightly worn. Found with two electrum trites in dump on the Acropolis.

AR 1/12th stater
Forepart of roaring lion r. confronting head of bull 1 . Double punch incuse
SNG vAulock 8: 2880; SNG Turk 1: 1020
$4.1 \quad 9$
0.72
MMS

Cahill and Kroll 2005, also from the early part of Croesus's reign. Naster's (1965) Massive style; Carradice's (1987) Early Style; Nimchuk's (2000) Type B; somewhat worn. Found with no. 2.1, in a recess of the Lydian fortification, associated with debris from the Persian sack of the city. See Cahill and Kroll 2005; Wallace 2016.

## AR 1/24th stater

Forepart of roaring lion r . confronting head of bull 1 .
Single punch incuse
Carradice 1987, pl. 10.5; SNG Turk 1: 1022

| 5.1 | 6 | 0.35 | MMS |
| :--- | :--- | :--- | :--- |
| 5.2 | 6 | 0.22 | MMS/S |

Naster's (1975) Massive Style; Carradice's (1987) Early Style; Nimchuk's (2000) Type B. No. $\mathbf{5 . 1}$ is misnumbered in Cahill and Kroll 2005; associated with a skull of a soldier killed in the Persian sack of the city. Coin shows some wear. 5.2 is from a much later archaeological context and is worn; coin not seen by me, and assigned here because of module (pictures unhelpful).

## Miletus

AR hemihekaton
Late sixth-early fifth century BC (Milesian standard)
Forepart of lion 1., head of roaring lion $r$.
Star-flower in incuse, one side indented
SNG vAulock 6: 2082; SNG Turk 1: 468-476; M7 GR 104
$6.1 \quad 10 \times 8 \quad 1.08 \quad$ NoEx
For circumstances of discovery, see Cahill and Kroll 2005.

## Thrace

306-281 BC
larger denomination
Head of Athena in Phrygian helmet r .
Trophy BA $\Sigma \mathrm{I} \Lambda E \Omega \Sigma-\Lambda \Upsilon \Sigma I M A X O \Upsilon$
SNG Cop: 1164-1167

| 7.1 | 12 | 23 | 7.87 | AT-Pac |
| :--- | :--- | :--- | :--- | :--- |
| 7.2 | 2 | 20 | 7.06 | AT-Pac |

Possibly Sardis
306-ca. 280 BC?
unit
Head of Athena in crested helmet, r.
Lion leaping r., spearhead below
BA $\Sigma I \Lambda E \Omega \Sigma-\Lambda \curlyvee \Sigma I M A X O Y$, illeg. mg.
SNG Cop. 1149-1157; Mørkholm 1991: 183; M7 GR 2

| 8.1 | 5 | 21 | 5.43 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 8.2 | 4 | 20 | 4.51 | NoEx |

Note that Mørkholm (1991, p. 82) thought that the chronology and the mints of this denomination and the following "have not yet been worked out." For suggestion of mint, see Evans, forthcoming.

## Probably Sardis

306-ca. 280 BC?
half unit
Head of Athena in crested helmet $r$.
Forepart of lion r., spearhead below
BA $\Sigma \mathrm{I} \Lambda E \Omega \Sigma-\Lambda \curlyvee \Sigma \mathrm{IMAXOY}$
M7 GR 3-6

| 9.1 | 12 | 16 | 2.70 | MMS/S, mg. App. 2 |
| :--- | :--- | :--- | :--- | :--- |
| 9.2 | 6 | 15 | 2.33 | AT, mg. illeg. |
| 9.3 | 6 | 14 | 2.54 | NoEx, mg. App. 2 |
| 9.4 | 6 | 14 | 2.33 | NoEx, mg. illeg. |
| 9.5 | 3 | 14 | 1.94 | LAW, mg. illeg. |
| 9.6 | 12 | 14 | frag'y | NoEx, mg. App. 2 |

For suggestion of mint, see Evans, forthcoming.

Demetrius II
Uncertain Mint, Macedon
239-229 BC
unit
Macedonian shield, mg. as boss, App. 2
Macedonian helmet BA- $\Sigma$ I
SNG Cop: 1224; Mørkholm 1991: 435

| 10.1 | 3 | 16 | 4.54 | HoB |
| :--- | :--- | :--- | :--- | :--- |

## Macedonian Kings

## Probably Sardis

Late fourth century BC?/297-294?
Macedonian shield, Gorgoneion as boss
Macedonian helmet B-A, caduceus below 1 .
Price 1991: 3158; Mørkholm 1991: 73; M7 GR 22

| 11.1 | 7 | 16 | 3.59 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 11.2 | 5 | 16 | 3.30 | MMS/S |
| 11.3 | 1 | 15 | 3.28 | NoEx |

For suggestion of mint, see Evans, forthcoming.
Note that Price (1991) suggested a mint in Salamis and a date of 323-315 BC; Mørkholm (1991, p. 60) suggested Miletus, minted by Cassander's sons in 297-294. The one known context for this coin is Late Roman.

## Miletus?

317-300 BC
Macedonian shield with thunderbolt as boss
Macedonian helmet B-A
Price 1991: 397; SNG Cop: 1119-1121
$\begin{array}{lllll}12.1 & 3 & 17 & 2.10 & M M S / S\end{array}$
Ashton (1998, p. 45) suggested Miletus as the mint, due to provenance of the coins and die axis.

## Uncertain Mint

Uncertain date
Macedonian shield, boss missing or illeg.
Macedonian helmet, all other symbols illeg. B-A
M7 GR 24

| 13.1 | - | 16 | 4.78 | F49 |
| :--- | :--- | :--- | :--- | :--- |
| 13.2 | - | 16 | 4.26 | NoEx |

## Alexander III or his Successors

Probably Sardis
336-323 BC?
Head of young Herakles in lionskin helmet r .
Bow in case/club A $\Lambda E \Xi A N \triangle P O Y$, below, cup
Price 1991: 325; M7 GR 11
$\begin{array}{lllll}14.1 & 10 & 19 & 6.64 & \text { MMS }\end{array}$
Field notes suggest cup not certain, now completely corroded. Price (1991) noted that three examples were found from the Sardis excavations, but M7 lists only one; cf. Ashton 1998, p. 45, agreeing with mint. Price assigned the coin to an unspecified mint.

Head of young Herakles in lionskin helmet $r$.
Bow in case/club A $\Lambda E \Xi A N \triangle$ POY symbol illeg.
half unit

M7 GR 17

|  | $\mathbf{1 5 . 1}$ | 6 | 19 | 5.05 | NoEx |
| :--- | :--- | :--- | :--- | :--- | :--- |
| half unit | 15.2 | 12 | 15 | 4.88 | NoEx |

Head of young Herakles in lionskin helmet r. quarter Bow in case/club, no symbol
Price 1991: 267; M7 GR 18
$\begin{array}{lllll}16.1 & 7 & 11 & 1.57 & \text { NoEx }\end{array}$
For suggestion of mint, see Evans, forthcoming. Price (1991) assigned the coin to an unspecified mint.

## Philip III

Probably Sardis
323-317 BC
unit
Head of young Herakles in lionskin helmet $r$.
Rider galloping r. ФI, no symbol
half unit Price 1991, p. 126, no. P2; M7 GR 20-21

| 17.1 | 7 | 19 | 6.02 | ByzFort |
| :--- | :--- | :--- | :--- | :--- |
| 17.2 | 6 | 19 | 3.68 | F49 |
| 17.3 | 12 | 18 | 5.42 | MMS |

Price (1991, p. 117) noted that eleven [nine are listed in M7] other examples of this coin were found in the Sardis excavations, calling the mint in western Asia Minor "virtually certain"; cf. Ashton 1998, p. 45. For the suggestion of mint, see Evans, forthcoming.

## Philip III or Antigonus I

Probably Sardis
323-310 BC
unit
Head of young Herakles in lionskin helmet r .
Bow in case/club, BA $\Sigma \mathrm{I} \Lambda \mathrm{E} \Omega \Sigma$, beneath, torch
Price 1991: 2800

|  | 18.1 | 3 | 20 | 6.23 | ByzFort |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | unit | 18.2 | 3 | 20 | 5.94 |
| NoEx |  |  |  |  |  |
| 18.3 | - | 20 | 5.20 | MMS/S |  |

Price (1991) suggested a mint in western Asia Minor. For the suggestion of mint, see Evans, forthcoming.

BITHYNIA, Nicomedia
61-57 BC
Head of Dionysos ivy wreath r. NIKAI $\in \Omega \mathrm{N}[\mathrm{B}] \mathrm{K} \Sigma$,
mg. below chin, App. 2
Thyrsus tied with fillet [ЄПІГАІО〒-]ПАПІРІОҮ-
KAPB $\Omega \mathrm{NO}[\Sigma]$
Recueil 1910, p. 398, nos. 8-9 (sic Apollo); Stumpf 1991: 102-3
$\begin{array}{lllll}19.1 & 12 & 20 & 4.07 & F 49\end{array}$
For date, see Stumpf 1991 pp. 67-68.

MYSIA, Pergamum
270/260-230/225 BC
Helm. head of Athena r.
Two stars, above patera?
SNG Cop: 325
20.1 - $13 \quad 1.24$ ByzFort
I.d. based on style of head, module. For date, Westermark 1991, p. 4.

260-197 BC
Helm. head of Athena r.
Ivy leaf ФIムE-TAIPOY
Westermark 1991: 8; M7 GR 32

| 21.1 | 12 | 13 | 2.02 | ThSt |
| :--- | :--- | :--- | :--- | :--- |
| 21.2 | - | 13 | 2.43 | MMS, i.d. prob. |

For the date of this coin, see Section 3.2.2.
ca. 250-230/220 BC
Head of Apollo r.
Thyrsus ФIムE-TAIPOY
Westermark 1991, p. 17

| 22.1 | 12 | 11 | 1.61 | NoEx |
| :---: | :---: | :---: | :---: | :---: |
| Attalus II |  |  |  |  |
| ca. 215-early second century BC? |  |  |  |  |
| Helm. head of Athena r. |  |  |  |  |
| Coiled serpent ФI^ETAIPOY, mg. |  |  |  |  |
| Westermark 1991: 14; M7 GR 34-40 |  |  |  |  |
| 23.1 | 12 | 17 | 4.00 | F55, mg. App. 2 |
| 23.2 | 12 | 17 | 3.75 | AT-Pac, mg. App. 2 |
| 23.3 | 12 | 13 | 1.72 | ByzFort, mg. App. 2 |
| 23.4 | - | 16 | 4.70 | F49, mg. illeg. |
| 23.5 | 3 | 16 | 3.63 | MMS/S, mg. illeg. |
| 23.6 | 12 | 15 | 5.30 | MMS/S, mg. illeg. |
| 23.7 | - | 15 | 3.49 | MMS/S, mg. illeg. |
| 23.8 | 8 | 15 | 3.53 | ByzFort, mg. illeg. |
| 23.9 | 12 | 15 | 2.52 | MD2, mg. illeg. |
| 23.10 | 6 | 14 | 4.02 | F49, mg. illeg. |
| 23.11 | 12 | 14 | 3.78 | AT, mg. illeg. |
| 23.12 | 12 | 13 | 2.70 | MMS/N, mg. illeg. |

Note that Mørkholm (1991, p. 129) suggested that coins with the name of Philetaerus should primarily date to the third century, though he does not exclude a minting date in the early second century. See also Westermark 1991, p. 152 for the date given above; Chameroy (2012, p. 141) agrees with this date. Two of these coins came from lots that were dated
half unit?
to the first century BC to the first half of the first century AD; others came from Late Roman or unstratified contexts.
ca. 215-175 BC? unit?
Helm. head of Athena r.
Unc. rev., ФI^ETAIPOY
cf. SNG France 2: 1695
$24.1 \quad 14 \quad 3.41 \quad$ НоВ
Table App. 1.1, obliterates rev. type
half unit $24.2 \quad-\quad 14 \quad 2.49 \quad$ ByzFort
Table App. 1.1, obliterates rev. type
Westermark (1991) only lists Athena/coiled serpent with an owl countermark; these coins are likely to have had such a reverse.
ca. 197-159 or ca. 133-27 BC
Head of Asklepios r., magistrate's name illeg.
Staff of Asklepios A $\Sigma$ K $\Lambda Н \Pi I O \Upsilon-\Sigma \Omega$ THPO $\Sigma$
BMC Mysia, p. 128, nos. 150-157; M7 GR 43-46

| 25.1 | 12 | $16 \times 19$ | 4.45 | NoEx, cm. App. 1 |
| :--- | :--- | :--- | :--- | :--- |
| 25.2 | 12 | 17 | 3.80 | NoEx, cm. App. 1 |
| 25.3 | 5 | 16 | 3.56 | NoEx |
| 25.4 | 10 | 16 | 3.29 | AT-Pac |
| 25.5 | 12 | 15 | 3.50 | NoEx |
| 25.6 | 12 | 15 | 3.36 | NoEx |
| 257 | 10 | 15 | 3.25 | MMS/N |
| 25.8 | 3 | 14 | 3.55 | MMS/N |
| 25.9 | 12 | 14 | 3.17 | HoB |
| 25.10 | 12 | 14 | 3.15 | NoEx |
| 25.11 | - | 16 | 3.16 | MMS/S |

Johnston, in M7, followed von Fritze (1910, pp. 22-24)
in seeing that these coins were no longer minted after the creation of the province of Asia. When findspot is known, contexts are Late Roman.
ca. 197-159 or ca. 133-27 BC
Head of Asklepios r.
Snake coiled around omphalos A $\Sigma$ K $\Lambda Н \Pi I O \Upsilon-\Sigma \Omega$ THPO $\Sigma$ mg. App. 2
BMC Mysia, p. 128, no. 158 var.; M7 GR 47-50 var.

| $\mathbf{2 6 . 1}$ | 12 | 22 | 6.96 | MMS/S |
| :--- | :--- | :--- | :--- | :--- |
| 26.2 | 11 | 22 | 6.69 | MMS/S |

For dating, see note on no. 25; also only known from Late Roman contexts.
ca. 159-133 BC
Helm. head of Athena r.
Trophy A $Н$ НNA $\Sigma$-NIKНФOPOY, mg. indistinguishable BMC Mysia, p. 130, nos. 172-182; M7 GR 56

| 27.1 | 2 | 22 | 5.91 | AT-Pac |
| :--- | :--- | :--- | :--- | :--- |
| 27.2 | 12 | 20 | 7.08 | NoEx |
| 27.3 | 6 | 18 | 5.37 | NoEx |
| 27.4 | - | 18 | 4.46 | F49, cm. App. 1 |
|  |  |  |  | rev. type obscure |
| 27.5 | - | 19 | 7.28 | NoEx, rev. type obscure |

For dating, see note on no. 25 ; when from excavated contexts, they include Late Roman material. See Westermark 1995, series 5.

```
ca. 159-133 BC
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Head of Athena in crested helmet with star r.
Owl on palm, wings outspread AЄHNA $\Sigma$ - NIKHФOPOY BMC Mysia, p. 132, nos. 190-204; M7 GR 52-54

| 28.1 | 6 | 17 | 2.70 | MMS/N, mg. App. 2 |
| :--- | :--- | :--- | :--- | :--- |
| 28.2 | 12 | 15 | 3.13 | NoEx, mg. App. 2 |
| 28.3 | 6 | 21 | 3.62 | MMS/S, details illeg. |
| 28.4 | 6 | 16 | 1.63 | Syn, same |

Schultz (1997, p. 19) believed that the bronze issues minted in the sanctuaries of Athena Nikephoros and Asklepios are not well sorted, nor can they be dated; he suggested that the Hellenistic coins that feature Athena and Asklepios cannot be distinguished from Roman-era issues of similar iconography. Von Fritz 1910 and Johnston in M7 dated them to ca. 159133 BC. Coins 28.1, 28.3-4 come from Late Roman contexts; coin 28.2 was NoEx. See Westermark 1995, series 2.

Second century BC
Head of Athena in crested helmet r .
Uncertain reverse
29.1 - 19 4.02 NoEx

AEOLIS, Cyme
320-250 BC
Forepart of horse r. K $\Upsilon$
One-handled vase, mg. in l. field
BMC Troas, p. 108, nos. 40-52; M7 GR 70

| 30.1 | 10 | 15 | 4.06 | ByzFort, mg. App. 2 |
| :--- | :--- | :--- | :--- | :--- |
| 30.2 | 12 | 19 | 5.17 | Ac-FT, mg. illeg. |

## Eagle standing r.

One-handled vase $\mathrm{K} \Upsilon$, mg. illeg.
BMC Troas, p. 107, nos. 27-39; M7 GR 69
$\begin{array}{lllll}31.1 & 6 & 16 & 3.42 & \text { NoEx }\end{array}$

Illeg. obv.
One-handled vase $\mathrm{K} \Upsilon$
$32.1 \quad-\quad 18 \quad 4.90 \quad$ MMS

IONIA, Colophon
330-285 BC dichalkon
Head of Apollo r.
Forepart of horse galloping r. $\mathrm{KO} \Lambda$ [magistrate name illeg.]
BMC Ionia, p. 38, nos. 20-26; M7 GR 77
$\begin{array}{lllll}33.1 & 12 & 14 & 1.93 & \text { AT }\end{array}$
Date after Milne 1941.

Ephesus
390-380 or 305-288 BC
Tyche head, turreted 1 .
Bee ЕФ
BMC Ionia, p. 55, nos. 68-70; M7 GR 81

| 34.1 | 6 | 10 | 1.19 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 34.2 | 12 | 10 | 1.04 | NoEx |
| 34.3 | 12 | 10 | 0.90 | NoEx |

Earlier date in SNG Turk 1: 193.

387-295 BC
Bee ЕФ
Forepart of stag kneeling r., head turned back
SNG Cop: 244
$\begin{array}{lllll}35.1 & 6 & 12 & 1.40 & \text { AT }\end{array}$

305-288 BC
Bee ЕФ
Stag kneeling l. head turned back; Magistrate's name illeg.
BMC Ionia, p. 54, nos. 63-67; M7 GR 80
$36.1 \quad-\quad 12 \quad 2.65 \quad$ F49

Illeg.
Forepart of kneeling stag (head not turned back), both legs folded and drawn up [...]NTIA?
cf. BMC Ionia, p. 54, no. 58, magistrate named Antialkidas
$\begin{array}{lllll}37.1 & 6 & 17 & 2.24 & M M S / N\end{array}$

280-258 BC
Bee with straight wings
Stag standing r. АПО $\Lambda \Lambda O \Delta \Omega P O \Sigma$
BMC Ionia, p. 57, nos. 80-81
$\begin{array}{lllll}38.1 & 12 & 15 & 3.60 & \text { MMS }\end{array}$

202-133 BC
Bee with straight wings
Stag standing r., quiver above EPMOTPE[ФE $\Sigma]$ down on $r$. Imhoof-Blumer 1901, p. 51, no. 22
$\begin{array}{llllll}39.1 & 12 & 16 & 3.81 & \text { F49 }\end{array}$

Fourth to third century BC
Bee
Illeg.
$40.1 \quad-\quad 11 \quad 1.40 \quad$ MMS

## Erythrae

387-300 BC
Head of young Herakles in lionskin helmet r .
Club and bow in case EPY [...]OY
BMC Ionia, p. 124, nos. 66-81
41.1 $6 \quad 11 \quad 1.24 \quad$ NoEx
Leucae
350-300 BC
Helm. head of Athena $3 / 4$ facing
Lion r. looking back $\Lambda$ E
BMC Ionia, p. 157, no. 7

| 42.1 | 1 | 9 | 1.21 | $M M S / N$ |
| :--- | :--- | :--- | :--- | :--- |

## Magnesia ad Maeandrum

350-190 BC, poss. 350-320 BC
Horseman r. with couched spear
Humped bull butting l. MAГN- $\Lambda$ YKOMH $\Delta H \Sigma$-API $\Sigma T$
BMC Ionia, p. 161, no. 27
$\begin{array}{lllll}43.1 & 4 & 16 & 2.16 & \text { NoEx }\end{array}$
Note that the magistrate's name $\Lambda \Upsilon \mathrm{KOMH} \Delta$ is found on a tetradrachm, which Konuk, in SNG Turk 1: 409, dated to 350-320 BC.

Smyrna
240-230 BC
Turreted head of Cybele r.
Tripod SMYPNA, mg. App. 2, grain of wheat Milne 1923: Type F, no. 34 (period V)

| 44.1 | 12 | 18 | 3.74 | NoEx |
| :--- | :--- | :--- | :--- | :--- |

240-190 BC
Turreted head of Tyche r.
Palm tree $\Sigma \mathrm{MYP}[\ldots$. . ?], magistrate name illeg. Milne 1923: Type G
$\begin{array}{lllll}45.1 & 12 & 13 & 0.92 & \text { ByzFort }\end{array}$
larger
smaller

75-50 BC
larger
Turreted head of Cybele r.
Statue of Aphrodite Stratonikis ZMYPNAI $\Omega \mathrm{N}-\Delta$-MHTPO $\Delta \Omega$ PO
BMC Ionia, p. 240, no. 27; Milne 1928: Type M
$\begin{array}{lllll}46.1 & 6 & 18 & 5.19 & \text { NoEx }\end{array}$
Dated by Milne.

Laur. head of Apollo r.
Homer seated on rock ZMYPNAI $\Omega$ N
Milne 1928: Type J, magistrate's name illeg.
$\begin{array}{lllll}47.1 & 11 & 22 & 13.86 & \text { MMS/S }\end{array}$

Head of Apollo r.
smaller
Hand in caestus, palm ZMYPNAI $\Omega$ N, magistrate's name
BMC Ionia, p. 242, nos. 47-60
48.1 $11 \quad 13 \quad 3.21 \quad$ ByzFort

A $\Theta$ HNAГOPA $\Sigma$; BMC Ionia no. 47; Milne 1928: 390
$\begin{array}{lllll}48.2 & 12 & 15 & 3.30 & \text { MMS, H1 }\end{array}$
IATPO $\Delta \Omega P O \Sigma$; BMC Ionia no. 52; Milne 1928: 403
Dated by Milne.

LYDIA, Caystriani peoples
Second or first century BC
Head of Dionysos r.
Bucranium-lyre KAYCTP-IA-N $\Omega \mathrm{N}$, mg.
BMC Lydia, p. 61, nos. 6-9

| 49.1 | 1 | 14 | 2.90 | MMS/S, mg. $\Delta \mathrm{K}$ |
| :--- | :--- | :--- | :--- | :--- |
| 49.2 | 12 | 13 | 2.37 | NoEx, mg. off flan |

## Philadelphia

Second century BC
Bust of Artemis r.
Apollo Musagetes standing r. $Ф \mathrm{I} \Lambda \mathrm{A} \triangle \mathrm{E} \Lambda \Phi \mathrm{E} \Omega \mathrm{N}$ -
ЕРМІППОГ-APXIEPEऽГ
BMC Lydia, p. 188, nos. 13-15
$\begin{array}{lllll}50.1 & 12 & 17 & 5.38 & \text { NoEx }\end{array}$

Sardis
ca. 245/220-second century BC large
Turreted veiled bust of Tyche r.
Zeus Lydios $\sum \mathrm{AP} \triangle \mathrm{IAN} \Omega \mathrm{N}$, illeg. mg.
BMC Lydia, p. 242, nos. 49-52; M7 GR 231, 233-234

| 51.1 | 12 | 24 | 9.86 | F55 |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{5 1 . 2}$ | 12 | 23 | 10.49 | ThSt, cm. App. 1 |
| 51.3 | 12 | 22 | 7.41 | ByzFort |
| 51.4 | - | 20 | 5.99 | AT |
| 51.5 | 12 | 20 | 5.70 | MMS, cm. App. 1 |


| Head of young Herakles r. medium |  |  |  |  | Monogram illeg., cm. of club in oval on obv. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Nude Apollo holding hawk $\Sigma \mathrm{AP} \triangle \mathrm{IAN} \Omega \mathrm{N}, \mathrm{mg}$. at 1. |  |  |  |  | 52.33 | - | 18 | 5.89 | F49 |
| BMC Lydia, p. 239, nos. 22-36; M7 GR 199-227 |  |  |  |  | 52.34 | - | 17 | 6.70 | NoEx |
| Tends to have a thick flan, reverse is concave |  |  |  |  | 52.35 | 12 | 17 | 6.18 | MMS/S |
| 52.1 | 12 | 14 | 6.88 | CW6, mg. App. 2 | 52.36 | - | 17 | 6.11 | F55 |
| 52.2 | 12 | 15 | 5.25 | ThSt, mg. App. 2 | 52.37 | 12 | 16 | 5.80 | MD2 |
| 52.3 | 12 | 15 | 5.28 | NoEx, mg. App. 2 | 52.38 | - | 16 | 5.42 | LAW |
| 52.4 | 12 | 15 | 5.45 | NoEx, mg. App. 2 | 52.39 | - | 16 | 5.07 | MMS |
| 52.5 | 12 | 15 | 5.90 | ThSt, mg. App. 2 | 52.40 | - | 16 | 4.83 | MMS |
| 52.6 | 12 | 15 | 6.26 | NoEx, mg. App. 2 | 52.41 | - | 16 | 4.52 | NoEx, |
| 52.7 | 11 | 16 | 4.90 | MMS, mg. App. 2 | 52.42 | 11 | 15 | 6.20 | MMS |
| 52.8 | 12 | 16 | 4.92 | NoEx, mg. App. 2 | 52.43 | 2 | 15 | 5.14 | NoEx |
| 52.9 | 6 | 16 | 6.30 | MMS/S, mg. App. 2 | 52.44 | - | 15 | 4.93 | ByzFort |
| 52.10 | 11 | 16 | 6.18 | ThSt, mg. App. 2 | 52.45 | - | 15 | 4.84 | NoEx |
| 52.11 | 1 | 16 | 6.68 | MMS, mg. App. 2 | 52.46 | 12 | 15 | 5.14 | ThSt |
| 52.12 | 6 | 15 | 6.66 | NoEx, mg. App. 2 | Two cm., Table App. 1.1 and Section 3.2.2 |  |  |  |  |
| 52.13 | 12 | 16 | 6.76 | NoEx, mg. App. 2 |  |  |  |  |  |
| 52.14 | 12 | 16 | 7.54 | ThSt, mg. App. 2 | Monogram illeg., no countermarks |  |  |  |  |
| 52.15 | 1 | 17 | 4.90 | MMS, mg. App. 2 | 52.47 | - | 19 | 4.50 | MMS |
| 52.16 | 1 | 17 | 5.20 | NoEx, mg. App. 2 | 52.48 | 3 | 18 | 7.35 | NoEx |
| 52.17 | 1 | 17 | 5.89 | ThSt, mg. App. 2 | 52.49 | 12 | 18 | 6.99 | F49 |
| 52.18 | 1 | 17 | 5.24 | HoB, mg. App. 2 | 52.50 | 12 | 18 | 6.50 | F55 |
| 52.19 | 6 | 17 | 6.30 | F49, mg. App. 2 | 52.51 | - | 18 | 4.77 | MMS |
| 52.20 | 12 | 17 | 7.62 | MMS/S, mg. App. 2 | 52.52 | 12 | 18 | 4.13 | MMS |
| 52.21 | 12 | 18 | 5.97 | ByzFort, mg. App. 2 | 52.53 | - | 17 | 7.21 | F49 |
| 52.22 | 1 | 17 | frag'y | MMS/S, mg. App. 2 | 52.54 | 1 | 17 | 6.97 | ByzFort |
| 52.23 | 1 | 16 | 6.64 | MMS/S, mg. App. 2 | 52.55 | 1 | 17 | 6.70 | MMS |
| 52.24 | 12 | 15 | 4.30 | MD2, mg. App. 2 | 52.56 | 1 | 17 | 6.50 | NoEx |
| 52.25 | 12 | 15 | 5.01 | NoEx, mg. App. 2 | 52.57 | - | 17 | 6.30 | MMS/N |
| 52.26 | 12 | 16 | 5.56 | MMS/S, mg. App. 2 | 52.58 | - | 17 | 6.20 | MMS |
| 52.27 | 12 | 15 | 6.14 | MMS/S, mg. App. 2 | 52.59 | 12 | 17 | 6.70 | ByzFort |
| 52.28 | 12 | 17 | 6.70 | NoEx | 52.60 | - | 17 | 6.07 | MMS/S |
|  |  |  |  |  | 52.61 | - | 17 | 5.76 | MMS |
| $\Delta \mathrm{H}-\mathrm{MO} \subseteq \Omega \mathrm{N} \Theta \mathrm{H}-\mathrm{BA} \triangle \mathrm{O} \Upsilon$ |  |  |  |  | 52.62 | 2 | 17 | 5.76 | MMS/N |
| As BMC Lydia, p. 239, no. 35; Bell 1916: 248 |  |  |  |  | 52.63 | 2 | 17 | 5.52 | MMS |
| 52.29 | 1 | 16 | 6.32 | MMS/S | 52.64 | - | 17 | 5.15 | NoEx |
|  |  |  |  |  | 52.65 | - | 17 | 4.90 | MMS/S |
| [...] O ¢ |  |  |  |  | 52.66 | 12 | 17 | 4.45 | F55 |
| As Bell 1916: 250 ? |  |  |  |  | 52.67 | - | 17 | 4.30 | MMS |
| 52.30 | - | 16 | 5.25 | NoEx | 52.68 | 1 | 17 | 4.20 | HoB |
| [...] $\mathrm{O} \Lambda \Lambda \Omega[\ldots]$ |  |  |  |  | 52.69 | 6 | 17 | 3.90 | F49 |
| 52.31 | 6 | 16 | 5.38 | F49 | 52.70 | 4 | 16 | 7.53 | F49 |
| $\Sigma[\ldots]$ |  |  |  |  | 52.71 | 12 | 16 | 6.40 | MMS/S |
| 52.32 | 12 | 17 | 7.07 | F49, mg. App. 2 | 52.72 | - | 16 | 6.32 | NoEx |
|  |  |  |  |  | 52.73 | 12 | 16 | 6.30 | F55 |
|  |  |  |  |  | 52.74 | 12 | 16 | 6.07 | ThSt |
|  |  |  |  |  | 52.75 | - | 16 | 5.85 | MMS |


| 52.76 | 12 | 16 | 5.60 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 52.77 | 6 | 16 | 5.58 | NoEx |
| 52.78 | - | 16 | 5.50 | MMS |
| 52.79 | 12 | 16 | 5.45 | MMS |
| 52.80 | 12 | 16 | 5.44 | NoEx |
| 52.81 | 12 | 16 | 5.30 | F55 |
| 52.82 | 7 | 16 | 5.12 | AT-LA |
| 52.83 | 1 | 16 | 5.10 | MMS/S |
| 52.84 | 6 | 16 | 4.70 | MMS/S |
| 52.85 | 2 | 16 | 4.65 | MMS/S |
| 52.86 | - | 16 | 4.37 | F55 |
| 52.87 | - | 16 | 3.70 | MMS/N |
| 52.88 | - | 16 | 3.70 | MMS |
| 52.89 | 12 | 15 | 6.68 | ThSt |
| 52.90 | 12 | 15 | 6.06 | MMS |
| 52.91 | 1 | 15 | 5.96 | F49 |
| 52.92 | 12 | 15 | 5.81 | HoB |
| 52.93 | - | 15 | 5.67 | MMS/S |
| 52.94 | - | 15 | 5.65 | MMS |
| 52.95 | 1 | 15 | 5.30 | NoEx |
| 52.96 | 2 | 15 | 5.02 | MMS/S |
| 52.97 | 4 | 15 | 3.08 | NoEx |
| 52.98 | - | 14 | 3.22 | MMS |


| 52.120 | 16 | 5.38 | F55 |
| :--- | :--- | :--- | :--- |
| 52.121 | 17 | 3.10 | MMS |
| 52.122 | 17 | 3.38 | F49 |
| 52.123 | 16 | 4.12 | MMS/S |
| 52.124 | 16 | 4.00 | NoEx |
| 52.125 | 16 | 3.20 | MMS |
| 52.126 | 15 | 6.64 | MMS/S |
| 52.127 | 15 | 6.07 | NoEx |
| 52.128 | 15 | 4.96 | F55 |
| 52.129 | 15 | 3.90 | MMS |
| 52.130 | 15 | 2.57 | MMS/S |
| 52.131 | 11 | 6.46 | MMS |

small
Head of young Dionysos r.
Forepart of lion r. $\Sigma A P \triangle I A N \Omega N$, mg.
BMC Lydia, p. 241, nos. 47-48; M7 GR 238-242

| $\mathbf{5 3 . 1}$ | 11 | 16 | 4.39 | MD2, mg. App. 2 |
| :--- | :--- | :--- | :--- | :--- |
| 53.2 | - | 18 | 2.39 | MMS, mg. off flan |

Second-first century BC
large
Head of young Herakles in lionskin helmet r .
Lion r., insect above $\Sigma A P \triangle I A N \Omega N$, in ex. MENE-MAXO $\Sigma$ BMC Lydia, p. 240, no. 37; M7 GR 182
$\begin{array}{lllll}54.1 & 2 & 18 & 5.60 & M M S / S, ~ c m . ~ A p p . ~\end{array}$
Prob. Herakles/Apollo, due to concave rev. and module, but all illeg.

| 52.99 | 16 | 3.80 | MMS, two cm. App. 1 |
| :--- | :--- | :--- | :--- |
| 52.100 | 16 | 4.27 | NoEx, cm. App. 1 |
| 52.101 | 16 | 5.70 | NoEx, cm. App. 1 |
| 52.102 | 17 | 5.03 | MMS/S, cm. App. 1 |
| 52.103 | 17 | 5.95 | MMS/N, cm. App. 1 |
| 52.104 | 21 | 6.30 | MMS/S, cm. App. 1 |
| 52.105 | 19 | 7.10 | MMS |
| 52.106 | 18 | 6.60 | MMS/N |
| 52.107 | 18 | 6.20 | MMS |
| 52.108 | 18 | 6.10 | MMS |
| 52.109 | 18 | 5.80 | MMS |
| 52.110 | 18 | 5.57 | MMS/S |
| 52.111 | 18 | 4.80 | F49 |
| 52.112 | 18 | 4.35 | MD1/S |
| 52.113 | 17 | 6.70 | F49 |
| 52.114 | 17 | 4.13 | MMS/S |
| 52.115 | 16 | 8.61 | ThSt |
| 52.116 | 16 | 6.80 | MMS |
| 52.117 | 16 | 6.41 | MMS |
| 52.118 | 16 | 5.74 | Wadi B |
| 52.119 | 16 | 5.50 | MMS |

Head of Apollo r.
medium
Club in wreath, mg. below, $\Sigma A P \Delta I-A N \Omega N$
BMC Lydia p. 238, nos. 10-21; M7 GR 183-198
Dies much smaller than flans; thick flans

| 55.1 | 9 | 13 | 3.12 | NoEx, mg. App. 2 |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{5 5 . 2}$ | 1 | 13 | 3.20 | MMS/S, mg. App. 2 |
| 55.3 | 8 | 13 | 4.12 | ByzFort, mg. App. 2 |
| 55.4 | 3 | 13 | 4.57 | CW6, mg. App. 2 |
| 55.5 | 6 | 14 | 3.06 | NoEx, mg. App. 2 |
| 55.6 | 6 | 14 | 3.49 | NoEx, mg. App. 2 |
| $\mathbf{5 5 . 7}$ | 12 | 14 | 4.10 | MMS/N, mg. App. 2 |
| 55.8 | 4 | 14 | 4.18 | PA, mg. App. 2 |
| 55.9 | 12 | 14 | 4.59 | HoB, mg. App. 2 |
| 55.10 | 12 | 15 | 3.55 | MMS/S, mg. App. 2 |
| 55.11 | 4 | 15 | 4.80 | PN/E, mg. App. 2 |
| 55.12 | 6 | 16 | 2.87 | NoEx, mg. App. 2 |
| 55.13 | 3 | 16 | 2.79 | NoEx, No mg., |
|  |  |  |  | as M7 GR 197 |
| $\mathbf{5 5 . 1 4}$ | 4 | 17 | 3.96 | MMS/S, mg. App. 2 |


| Illeg. monogram |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 55.15 | 9 | 19 | 2.84 | MMS |
| 55.16 | 6 | 18 | 5.71 | F55 |
| 55.17 | 6 | 17 | 4.50 | MMS/S |
| 55.18 | - | 16 | 3.20 | MMS |
| 55.19 | 7 | 15 | 5.11 | NoEx |
| 55.20 | 12 | 15 | 4.07 | MMS/S |
| 55.21 | 6 | 15 | 4.04 | NoEx |
| 55.22 | 6 | 15 | 3.84 | NoEx |
| 55.23 | 5 | 15 | 3.83 | MMS |
| 55.24 | - | 15 | 3.72 | MMS/S |
| 55.25 | 6 | 15 | 3.66 | HoB |
| 55.26 | 1 | 15 | 2.86 | NoEx |
| 55.27 | 6 | 14 | 5.51 | NoEx |
| 55.28 | - | 14 | 4.76 | MMS/N |
| 55.29 | - | 14 | 4.18 | ByzFort |
| 55.30 | 6 | 14 | 3.90 | NoEx |
| 55.31 | 5 | 13 | 4.01 | NoEx |

Head of young Dionysos $r$.
Horned panther with broken spear 1.

## Thyateira

Third to early second century BC
Head of Apollo r.
Double axe $\Theta$ YATEI-PHN- $\Omega \mathrm{N}$
BMC Lydia, p. 292, no. 4
$\begin{array}{lllll}60.1 & 11 & 15 & 4.33 & \text { MMS/S }\end{array}$

Tralles
Second-first century BC
Zeus standing holding Nike, in wreath
Bull walking r. TPA $\Lambda \Lambda I-A N \Omega N$
BMC Lydia, p. 336, nos. 61-62
$\begin{array}{lllll}61.1 & 6 & 15 & 5.00 & \text { MMS }\end{array}$

First century BC
Head of Zeus r.
Eagle on thunderbolt; TPA $\Lambda \Lambda I A N \Omega N$, illeg. magistrate's name
BMC Lydia, p. 336, no. 69
$\begin{array}{llllll}\text { small } & 62.1 & 6 & 21 & 8.93 & \text { F55 }\end{array}$
$\Sigma \mathrm{AP} \triangle \mathrm{I}-\mathrm{AN} \Omega \mathrm{N}$, monograms
BMC Lydia, p. 241, nos. 40-44; M7 GR 235-37

| 56.1 | 12 | 18 | 3.33 | ByzFort, mg. App. 2 |
| :--- | :--- | :--- | :--- | :--- |
| 56.2 | 12 | 17 | 3.61 | MMS/S, mgs. illeg. |
| 56.3 | 12 | 18 | 5.20 | MMS/S, same |
| 56.4 | 12 | 18 | 7.00 | F49, i.d. prob., no mg. le |

PHRYGIA, Apamea
133-48 BC
Turreted head of Artemis r.
Marsyas advancing r. on meander pattern, playing flutes
АПАМЕ $\Omega \mathrm{N}$, illeg. magistrate's name
BMC Phrygia, p. 80, no. 62
63.1 - $\quad 17 \quad 3.40 \quad$ MMS/S

Third-first century BC
Head of young Herakles in lionskin helmet r .
Kantharos $\Sigma \mathrm{AP} \triangle \mathrm{I}-\mathrm{AN} \Omega \mathrm{N}$ to r. and l., below mgs.
BMC Lydia, p. 241, nos. 45-46 (sic bearded); M7 GR 228-230

| $\mathbf{5 7 . 1}$ | 12 | 14 | 3.00 | NoEx, mg. App. 2 |
| :--- | :--- | :--- | :--- | :--- |
| 57.2 | 12 | 16 | 3.08 | PA, mg. illeg. |

189-133 BC
Attalid 4-unit
Bust of Artemis r.
Athena standing $\Sigma \mathrm{AP} \triangle \mathrm{IAN} \Omega \mathrm{N}-\mathrm{A} \Lambda \mathrm{KAIO} \Sigma$-A $\Lambda$ KAIO $\Upsilon$
BMC Lydia, p. 243, no. 57
$\begin{array}{lllll}58.1 & 12 & 21 & 7.46 & \text { MMS/S }\end{array}$

Head of young Dionysos $r$.
Attalid 2-unit
Demeter in chiton leaning with 1 . on torch $\Sigma A P \Delta I A N \Omega N$
BMC Lydia, p. 243, nos. 60-61

| 59.1 | 7 | 19 | 4.47 | MMS, illeg. name |
| :--- | :--- | :--- | :--- | :--- |
| 59.2 | 6 | 20 | 6.83 | MMS |

In l. field, vertical: $\Theta E O-[\ldots]$ ]? I ?[...]; else name not published?

LYCIA, Phellus
First century BC unit
Head of Apollo r.
Bow and quiver in incuse square $\Lambda \Upsilon K I-Ф E$
Troxell 1982: 72
$\begin{array}{lllll}64.1 & 12 & 10 & 1.18 & M M S / S, ~ H 2 ~\end{array}$

## Ptolemy III

EGYPT, Alexandria
247/6-221/20 BC
Head of Alexander in elephant-skin helmet r., centering hole
Eagle, wings closed, standing on thunderbolt, cornucopiae on shoulder, head turned back ПТО

BA $\Sigma \mathrm{I} \Lambda \mathrm{E} \Omega \Sigma$, between legs E
Svoronos 1908: 976
$\begin{array}{lllll}65.1 & 12 & 24 & 8.02 & \text { F49 }\end{array}$
small
.

Unknown Ruler
ITALY, Rome
217-87 BC
Janiform heads of Dioscuri
Prow of ship ROMA
$\begin{array}{lllll}66.1 & 3 & 30 & 22.28 & \text { MD2 }\end{array}$
ca. 211-208 BC
Head of young Herakles r., three dots
Prow r., three dots ROMA
RRC: 56.5
67.1 $9 \quad 20 \quad 6.32 \quad$ MMS/S

This was a highly-varied series, with weights ranging from ca. 4-12 g. Crawford 1974 gives a date of "after 211 BC," but the series was not likely struck much after, as the word "Roma" shifts to the bottom of the flan after that date.

## Uncertain Mint

Second or first century?
Diademed head r. (Apollo, Artemis, or Tyche?)
Stag (or horse) springing 1. [?]XA-I-O[I or N or M?]
$\begin{array}{lllll}68.1 & 6 & 15 & 3.16 & \text { F49 }\end{array}$
as, uncial standard
quadrans

Seleucia ad Tigrim
285-280 BC
denomination A
Winged head of Medusa r .
Bull butting r. BA $\Sigma I \Lambda E \Omega \Sigma$ in ex. $\Sigma E \Lambda E Y K O Y$
Houghton and Lorber 2002: 151
$\begin{array}{lllll}71.1 & 11 & 23 & 9.98 & \text { F49 }\end{array}$
Concave rev., App. 2 for C/m

Antiochus I
Sardis or perhaps Smyrna
280-261 BC denomination C or D
Bust of Athena facing
Nike l. with wreath and palm BA $\Sigma \mathrm{I} \Lambda E \Omega \Sigma$ - ANTIOXOY, C/m illeg.
Houghton and Lorber 2002: 315; M7 GR 358; Bell 1911:
368-376

| 72.1 | 12 | 13 | 1.97 | MMS/S |
| :--- | :--- | :--- | :--- | :--- |
| 72.2 | 1 | 13 | 2.53 | ThSt, cm. App. 1 |
| 72.3 | 12 | 14 | 1.92 | F49 |
| 72.4 | 11 | 15 | 2.65 | F49 |
| 72.5 | 9 | 17 | 2.57 | NoEx |

Since nine of these coins (including four in M7 GR 357-358) have been found in the Sardis excavations, Sardis should be preferred as the mint.

## Antiochus II

## Sardis

261-246 BC
denomination B or C, first series
Head of Apollo r.
Tripod, anchor below BA $\Sigma I \Lambda E \Omega \Sigma$-ANTIOXOY
Houghton and Lorber 2002: 520 var.
$\begin{array}{lllll}\mathbf{7 3 . 1} & 7 & 17 & 3.33 & \text { ByzFort, C/m App. } 2\end{array}$

Head of Apollo r. denomination B or C, second series
Tripod, anchor below BA $\Sigma \mathrm{I} \Lambda E \Omega \Sigma$-ANTIOXOY
Houghton and Lorber 2002: 522; M7 GR 360
$\begin{array}{lllll}74.1 & 1 & 16 & 4.48 & M M S / N, ~ C / m ~ A p p . ~\end{array}$
282-281 BC? denomination C or D
Winged head of Medusa r.
Humped bull butting l. BA $\Sigma \mathrm{I} \Lambda \mathrm{E} \Omega \Sigma$ in ex. $\Sigma \mathrm{E} \Lambda \mathrm{E} \Upsilon \mathrm{KO}$; no C/m visible
Houghton and Lorber 2002: 6 var.
$\begin{array}{lllll}70.1 & 3 & 14 & 2.45 & \text { NoEx }\end{array}$
The type is listed in Houghton and Lorber 2002 as above, with straight edge, "delicate style and low relief," but the butting bull left, no controls, is given to Antioch Denomination B (18-19 mm), Houghton and Lorber 2002: 24.

Head of Apollo r. denomination C, third series
Tripod, anchor below BA $\Sigma I \Lambda E \Omega \Sigma$-ANTIOXOY
Houghton and Lorber 2002: 523; M7 GR 382
75.1 $12 \quad 17 \quad 4.79 \quad$ ByzFort, C/m App. 2

Head of Apollo r.
denomination B or C
Tripod, anchor below BA $\Sigma \mathrm{I} \Lambda \mathrm{E} \Omega \Sigma$-ANTIOXOY
Houghton and Lorber 2002: 526-527
$\begin{array}{lllll}76.1 & 6 & 13 & 2.39 \quad \text { NoEx, C/m illeg. }\end{array}$

| Head of Apollo r. $\quad$ denomination B or C | 81.1 | 12 | 17 | 3.58 | NoEx, C/m App. 2 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Tripod, anchor below BA $\Sigma I \Lambda E \Omega \Sigma$-ANTIOXOY | 81.2 | 5 | 17 | 2.40 | F55, C/m illeg. |
| Houghton and Lorber 2002: 522-527 | 81.3 | - | 17 | 4.94 | F49, C/m illeg. |


| 77.1 | 12 | 15 | 3.10 | $M M S / S, C / m ~ i l l e g$. |
| :--- | :--- | :--- | :--- | :--- |

Head of Apollo r. denomination D
Cithara, anchor below BAINE $2 \Sigma$-ANTIOXOY
Houghton and Lorber 2002: 528; M7 GR 369

| 78.1 | 7 | 12 | 2.80 | MMS/N, C/m illeg. |
| :--- | :--- | :--- | :--- | :--- |
| 78.2 | 6 | 14 | 3.11 | NoEx, C/m illeg. |
| 78.3 | 12 | 14 | 2.12 | CW6, C/m App. 2 |
| 78.4 | - | 12 | 1.70 | MMS, C/m illeg., |
|  |  |  |  | i.d. prob. |

Turreted and veiled head of Tyche r. denomination D
Tripod BAEIAE $2 \Sigma$-ANTIOXOY
Houghton and Lorber 2002: 585

| 79.1 | 12 | 12 | 3.40 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 79.2 | 1 | 12 | 1.50 | E Road, C/m App. 2 |

These two coins share an obverse die, and likely a reverse die; both have a concave reverse. No. $\mathbf{7 9 . 2}$ is listed in records as M7 GR 368, which is incorrect. It appears that the coin was not included in M7, and so it is included here. The obverse shows a small head with feminine features, and a long vertical bar at the rear of the head showing the beginning of a turreted crown. On both coins the name of the king is legible. $\mathbf{7 9 . 1}$ has a thick flan. The control mark is not given in Houghton and Lorber 2002.

## Seleucus II

Sardis
246-241 BC denomination C
Head of young Herakles in lionskin helmet r .
Apollo seated on omphalos l. BA $\Sigma \mathrm{I} \Lambda \mathrm{E} \Omega \Sigma-\Sigma \mathrm{E} \Lambda \mathrm{E} Y \mathrm{KOY}$
Houghton and Lorber 2002: 657, C/m illeg.

| 80.1 | 12 | 14 | 2.22 | MMS/S |
| :--- | :--- | :--- | :--- | :--- |
| 80.2 | - | 17 | 3.10 | MMS/N, concave rev. |
| 80.3 | 6 | 17 | 4.58 | MMS, concave rev. |
| 80.4 | 10 | 17 | 4.85 | MMS/S |

Hoover (in Houghton and Lorber 2002, p. 241) suggested the coins were minted in the city before the revolt of Hierax. He does not mention a concave reverse.

Head of Athena in crested Attic helmet r .
Apollo standing with bow BA $\Sigma \mathrm{I} \Lambda \mathrm{E} \Omega \Sigma-\Sigma \mathrm{E} \Lambda \mathrm{E} Y \mathrm{KOY}$
Houghton and Lorber 2002: 660; M7 GR 372, 374

|  | 86.1 | - | 12 | 1.68 | ByzFort |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 86.2 | 12 | 12 | 1.71 | AT |
| denomination C | 86.3 | - | 12 | 2.01 | AT-Pac |

Antioch on the Orontes?
244-226 BC
AR drachm
Head of Athena in crested Attic helmet r.
Apollo standing resting on bow, holding arrow
BA $\Sigma$ I $\Lambda E \Omega \Sigma-\Sigma E \Lambda E Y K O \Upsilon$
cf. Houghton and Lorber 2002: 691, not listed with this C/m
$\begin{array}{lllll}82.1 & 12 & 17 & 3.70 & \text { MMS, C/m App. } 2\end{array}$

Seleucia ad Tigrim
246-226 BC
denomination D
Three-quarter head of Athena 1.
Nike standing l. BA $\Sigma I \Lambda E \Omega \Sigma-\Sigma E \Lambda E \Upsilon K O Y$
Houghton and Lorber 2002: 769

| 83.1 | 12 | 15 | 2.60 | NoEx, C/m illeg. |
| :--- | :--- | :--- | :--- | :--- |

Beveled edge

## Achaeus

## Sardis

220-214 BC denomination B
Head of Apollo r.
Eagle with palm BA $\Sigma \mathrm{I} \Lambda \mathrm{E} \Omega \Sigma$-AXAIOY
cf. Houghton and Lorber 2002: 691, not listed with this C/m $\begin{array}{lllll}84.1 & 6 & 20 & 4.30 & \text { NoEx }\end{array}$
cm. App. 1; C/m App. 2

Head of Apollo r. denomination C
Eagle with wreath BA $\Sigma I \Lambda E \Omega \Sigma$-AXAIOY
Houghton and Lorber 2002: 956; M7 GR 380
$85.12 \quad 16 \quad 2.95 \quad$ ByzFort
cm. App. 1; C/m App. 2

## Antiochus III

Sardis denomination D,
213-203 BC? series 1 horizontal legend
Head of Apollo r.
Elephant l. BA $\Sigma$ I $\Lambda E \Omega \Sigma$-ANTIOXOY, no C/m
Houghton and Lorber 2002: 979 (1); M7 GR 381

Date suggested by Hoover in Houghton and Lorber 2002, p. 355.
denomination $D$, series 1 vertical legend
Head of Apollo r.
Elephant l. BA $\Sigma I \Lambda E \Omega \Sigma$-ANTIOXOY
Houghton and Lorber 2002: 981

| 87.1 | 12 | 13 | 1.91 | ThSt, C/m App. 2 |
| :--- | :--- | :--- | :--- | :--- |
| 87.2 | 12 | 11 | 1.40 | NoEx, C/m App. 2 |

Uncertain Seleucid Ruler
Uncertain Mint
286-187 BC
M7 GR 400; corrosion can be quite granular

| 93.1 | 11 | 1.00 | MMS |
| :--- | :--- | :--- | :--- |
| 93.2 | 11 | 1.47 | F49 |

$93.3 \quad 11 \quad 1.48 \quad$ F55
$93.4 \quad 11 \quad 1.60 \quad \mathrm{MMS} / \mathrm{S}$

| 93.5 | 11 | 1.60 | F49 |
| :--- | :--- | :--- | :--- |
| 93.6 | 11 | 1.65 | Tomb 07.2 |


| 93.7 | 12 | 0.52 | F55 |
| :--- | :--- | :--- | :--- |

$93.8 \quad 12 \quad 1.10 \quad$ MMS
$93.9 \quad 12 \quad 1.43 \quad$ MMS/S
$93.10 \quad 12 \quad 1.54 \quad$ MMS/S
$93.11 \quad 12 \quad 1.62 \quad \mathrm{MMS} / \mathrm{S}$
$93.12 \quad 12 \quad 1.76 \quad$ MMS
$93.13 \quad 12 \quad 1.78 \quad$ NoEx
$93.14 \quad 12 \quad 1.87 \quad \mathrm{MMS} / \mathrm{S}$
$93.15 \quad 12 \quad 1.96 \quad$ MMS/S

| 93.16 | 12 | 1.99 | F49 |
| :--- | :--- | :--- | :--- |

$93.17 \quad 12 \quad 2.10 \quad \mathrm{MMS} / \mathrm{S}$

Sardis? denomination D? series 2
Head of Apollo r.
Apollo leaning on tripod BA $\Sigma I \Lambda E \Omega \Sigma$-ANTIOXOY, no C/m cf. Houghton and Lorber 2002: 983 (6)

| 90.1 | 6 | 10 | 1.61 | MD2 |
| :--- | :--- | :--- | :--- | :--- |
| 90.2 | 12 | 10 | 1.77 | MMS/S |
| 90.3 | - | 10 | 1.39 | MMS/S, i.d. prob. |

93.21
93.23
93.24

Hoover noted another possible example of this denomination in the Afyon Museum.

Antioch on the Orontes
$233-211 / 10 \mathrm{BC} \quad$ denomination C
Laur. head of Antiochus as Apollo r.
Apollo on omphalos BA $\Sigma \mathrm{I} \Lambda E \Omega \Sigma$-ANTIOXOY
Houghton and Lorber 2002: 1049

| 91.1 | 12 | 12 | 3.15 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 91.2 | 12 | 12 | 2.60 | F49 |

$\mathrm{C} / \mathrm{m}$ illeg. or off flan; given to mint due to obv.

211/10-209/8 BC denomination A, series 2
Laur. head of Antiochus as Apollo r.
Apollo seated on omphalos BAEINE $\Omega \Sigma$-ANTIOXOY
Houghton and Lorber 2002: 1054
$\begin{array}{lllll}92.1 & 12 & 22 & 12.80 & \text { F49, no C/m visible }\end{array}$

| Uncertain Hellenistic |  |  |  | 94.44 | 17 | 2.68 | F49 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 350-27 BCE |  |  |  | 94.45 | 17 | 3.20 | MMS |
| M7 GR 399; corrosion often shows in layers on side of flan |  |  |  | 94.46 | 17 | 3.64 | MMS |
| 94.1 | 10 | 0.73 | MMS/S, head/goat r.?, | 94.47 | 17 | 4.41 | MMS/S |
|  |  |  | H2 | 94.48 | 17 | 4.49 | MMS/S |
| 94.2 | 10 | 1.20 | MMS | 94.49 | 17 | 4.60 | MMS |
| 94.3 | 10 | 2.85 | MMS | 94.50 | 17 | 5.20 | MMS |
| 94.4 | 11 | 0.84 | MMS/S | 94.51 | 17 | 5.20 | MMS |
| 94.5 | 11 | 1.74 | MMS | 94.52 | 17 | 6.51 | NoEx |
| 94.6 | 12 | 0.84 | MMS/N, cm. App. 1 | 94.53 | 17 | frag'y | AT |
| 94.7 | 12 | 0.95 | F49 | 94.54 | 18 | 2.76 | F49 |
| 94.8 | 12 | 2.28 | NoEx | 94.55 | 18 | 3.32 | ByzFort |
| 94.9 | 12 | 3.48 | NoEx | 94.56 | 18 | 3.34 | MMS |
| 94.10 | 13 | 1.80 | F49 | 94.57 | 18 | 3.90 | MMS |
| 94.11 | 13 | 1.93 | MMS | Prob. | first | ry BC |  |
| 94.12 | 13 | 2.24 | CW6 | Head |  | r. laur. | . $] \Theta$ [...], rev. illeg. |
| 94.13 | 13 | 2.86 | MMS | 94.58 | 18 | 4.07 | ByzFort |
| 94.14 | 13 | 2.95 | MMS/S | 94.59 | 18 | 5.09 | MMS/S |
| 94.15 | 14 | 1.60 | MMS | 94.60 | 18 | 5.25 | MMS/S |
| 94.16 | 14 | 1.80 | MMS | 94.61 | 18 | 6.27 | MMS |
| 94.17 | 14 | 2.19 | AT | 94.62 | 18 | 6.34 | MMS/S |
| 94.18 | 14 | 2.20 | MMS | 94.63 | 18 | frag'y | MMS/S |
| 94.19 | 14 | 2.26 | F49 | 94.64 | 19 | 4.20 | MMS |
| 94.20 | 14 | 2.40 | MMS | 94.65 | 19 | 4.37 | MMS/S |
| 94.21 | 15 | 2.20 | MMS/S | 94.66 | 19 | 4.40 | NoEx |
| 94.22 | 15 | 2.20 | MMS | 94.67 | 19 | 4.80 | PA |
| 94.23 | 15 | 2.30 | MMS | 94.68 | 19 | 4.80 | MMS |
| 94.24 | 15 | 2.98 | ByzFort | 94.69 | 19 | 5.53 | NoEx |
| 94.25 | 15 | 3.39 | MMS/S | 94.70 | 19 | 5.73 | F49 |
| 94.26 | 15 | 5.25 | F49 | 94.71 | 19 | 5.95 | F49 |
| 94.27 | 16 | 3.05 | F55 | 94.72 | 19 | 7.42 | F49 |
| 94.28 | 16 | 3.36 | F55 | 94.73 | 19 | 9.39 | MMS/N |
| 94.29 | 16 | 3.37 | MMS/S | 94.74 | 20 | 3.64 | NoEx |
| 94.30 | 16 | 3.40 | ByzFort | 94.75 | 20 | 5.37 | MMS/N |
| 94.31 | 16 | 3.42 | MMS/S | 94.76 | 20 | 5.76 | F49 |
| 94.32 | 16 | 3.49 | MMS/S | 94.77 | 20 | 6.30 | MMS |
| 94.33 | 16 | 3.70 | MMS | 94.78 | 20 | 6.93 | MMS |
| 94.34 | 16 | 3.80 | MMS | 94.79 | 20 | 8.23 | MMS/S |
| 94.35 | 16 | 3.85 | F55 | 94.80 | 21 | 3.32 | MMS/S |
| 94.36 | 16 | 3.86 | MMS/S | 94.81 | 21 | 4.11 | MMS/S |
| 94.37 | 16 | 3.98 | NoEx | 94.82 | 22 | 4.08 | MMS/S, cm. App. 1, |
| 94.38 | 16 | 4.40 | MMS |  |  |  | pierced |
| 94.39 | 16 | 4.60 | MMS/N | 94.83 | 23 | 8.33 | F49 |
| 94.40 | 16 | 4.63 | F55 | 94.84 | 24 | 9.08 | F55 |
| 94.41 | 16 | 5.49 | NoEx | 94.85 | - | frag'y | ByzFort |
| 94.42 | 17 | 2.07 | MMS | 94.86 | - | frag'y | MMS/N |

Uncertain Hellenistic to Roman Provincial
First century BC-first century AD
M7 GR 401
95.1

## Roman Provincial

Note: the catalog does not give proper breaks in the legends (as these can vary within a series) nor direction of legends, as per examples in RPC.

## ACHAEA <br> Corinth

$1-2$ AD Augustus
Head r. bare AVGVSTVS CORINT (lig.)
P AEBVT SP F C IVLIO HERA IIVIR QVI ITER (lig.)
in wreath

| RPC I: 1138 |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 96.1 | 6 | 21 | 5.70 | MMS/S |

THRACE
Anchialos
139-161 AD Marcus Aurelius
Bust r. dr. [...]PHAIOCOY[...] (not visible on this coin)
Statue group of Hermes and baby Dionysos
ANXIA.... (not visible on this coin)
RPC IV: temp. no. 4518; Lacroix 1949: 298; Schwartz 1893
$\begin{array}{lllll}97.1 & 6 & 28 & 13.30 & \text { NoEx, cm. App. } 1\end{array}$
Only one other example of this coin is known. This reverse type is otherwise only known in Pautalia, for Caracalla.

## "ASIA"

ca. 25 BC Augustus
Head r. bare CAESAR
AVGVSTVS in laurel wreath
RPC I: 2235; M7 R 3

| 98.2 | 12 | 25 | 9.83 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 98.3 | - | 26 | 9.70 | MMS |
| 98.4 | 1 | 26 | 11.13 | MMS |
| 98.5 | 7 | 30 | 10.40 | MMS |
| 98.6 | - | 24 | 4.32 | MMS, halved |

Halved coins of these types are only common from excavations at Sardis.

| 98.7 | - | 28 | 6.49 | HoB, cm. App. 1, halved |
| :--- | :---: | :---: | :---: | :--- |
| 98.8 | 12 | 26 | 4.71 | NoEx, halved |
| 98.9 | - | 23 | 3.54 | PA, halved, rev. type |
|  | uncertain but likely; cm. (also halved) App. 1 |  |  |  |

ca. 27-25 BC
as, uncertain class
Head r. bare
Inscription in wreath

| 99.1 | 9 | 20 | 11.49 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 99.2 | - | 20 | 12.49 | NoEx |

BITHYNIA
Nicomedia?
117-138 AD Hadrian
[Head of emperor r. laur.]
Octastyle temple, pellet between center columns; in
pediment, emperor with spear sacrificing over an altar, and in each corner, pellet KOINON in ex. BЄI@YNIAC
RPC III: 1013
100.1 $34 \quad 22.77$ Wadi B

This coin is unique since, in antiquity, the obverse was almost entirely obliterated to make essentially a one-sided medallion. See discussion, Section 3.3.2.

## MYSIA

Parium
181-192 AD Commodus
Bust r. laur. IMP CAIA COMMOD
Founder plowing behind team of oxen CGIHP
BMC Mysia p. 105, no. 101 (sic obv. inscrip.)
$\begin{array}{lllll}101.1 & 12 & 16 & 2.17 & \text { НоВ }\end{array}$

Pergamum
10-2 BC Augustus 1 assarion?
Bust r. laur. $\Sigma E B A \Sigma T O N$
as, class 2 Hexastyle temple on podium XAPINOC ГРАММАТЕ $\Upsilon \Omega \mathrm{N}$ RPC I: 2358

| 102.1 | 12 | 19 | 4.77 | ThSt |
| :--- | :--- | :--- | :--- | :--- |
| 102.2 | 1 | 21 | 5.20 | MMS |

$98.1 \quad-\quad 24 \quad 11.25 \quad$ F49


198-217 AD CARACALLA $11 / 2$ assaria
Bust r. laur. AYTK MAYP ANT $\Omega$ NEINOC
Artemis subduing stag TPIC NЄ $\Omega \mathrm{KOP} \Omega \mathrm{N} \in Ф \in C I \Omega \mathrm{~N}$
BMC Ionia, p. 86, no. 277
$\begin{array}{lllll}116.1 & 6 & 22 & 5.35 & \text { ThSt }\end{array}$
Johnston 2007, p. 84 for denomination

198-250 AD
Bust r. bare dr.?
Artemis r. drawing arrow from quiver, legend illeg.
$\begin{array}{lllll}117.1 & 6 & 24 & 5.29 & M D 1 / S\end{array}$

Bust r. laur. dr. [...] A[...]OC
Artemis r. drawing bow or pulling arrow from quiver?, at feet, hunting $\operatorname{dog}[\ldots \mathrm{NE} \Omega \mathrm{K}] \mathrm{OP} \Omega \mathrm{N}$

```
118.1 7 20 4.73 NoEx
```

Johnston 2007, p. 84 for denomination

## Metropolis

198-211 AD CARACALLA
Bust r. laur. [...] $\Omega \mathrm{N} \in \mathrm{I}[. .$.
Emperor standing holding spear MНТРОПО $Є € I T \Omega N$
BMC Ionia, p. 176, no. 7

| 119.1 | 6 | 20 | 3.07 | NoEx |
| :--- | :--- | :--- | :--- | :--- |

253-268 AD SALONINA
Bust r. dr., behind crescent CA $\Lambda \Omega \mathrm{N}$ ХРVСОГОNH CЄВА
Tyche standing with armed emperor МНТРОП $\lfloor € I T \Omega$ N
T $\Omega \mathrm{N} \in \mathrm{E}$ I $\Omega$ NIA
BMC Ionia, p. 181, no. 34
$\begin{array}{lllll}120.1 & 6 & 23 & 4.93 & \text { NoEx }\end{array}$
Pierced for suspension (neither bust nor Tyche upright)

## Phocaea

244-249 AD
Bust of Tyche r., turreted $\Phi \Omega K \in A$
Galley with caps of Dioscuri $\Phi \Omega \mathrm{KAI} \Omega \mathrm{N}$
BMC Ionia, p. 219, nos. 118-121; M7 GR 109

| 121.1 | 6 | 17 | 3.70 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 121.2 | 5 | 19 | 3.54 | MMS/S |

## Smyrna

37-38 AD CAligula 1½ assaria
Head r., laur. ГAION KAICAPA ГЄPMANIKON ЄПI AOҮIO $А А$
Head of Germanicus confronting bust of Agrippina
ГЄРМАNIKON АГРІППЄINAN
SMYPNAI $\Omega$ N MHNOФANHC

RPC I: 2471; Klose 1987: XXIX

| 122.1 | 6 | 21 | 5.65 | $M M S / S$ |
| :--- | :--- | :--- | :--- | :--- |

RPC I (p. 418) and Klose and Johnston (2007, table 74) agree on the denomination; this denomination typically has two portraits on the obverse. One example in Istanbul is recorded from the 1913 Sardis excavations (6848).

54-59 AD Nero
1 assarion
Head r. laur. of Nero confronting bust of Agrippina
NЄP $\Omega$ NA $\Sigma Є$ ВА $\Sigma T O N$ АГРІППINAN $\Sigma Є В А \Sigma T H N$
Winged Nemesis advancing r. holding caduceus, snake at foot, uncertain legend
RPC I: 2478-2479; Klose 1987: XXXIII
123.1 $6 \quad 18 \quad 4.08 \quad$ MMS/S edges chiseled off Denomination according to RPC I (p. 418) and Johnston (2007, table 74); Klose preferred $11 / 2$ assaria.

Bust of Senate r. $\Theta \in O N$ CYNK 1 HTON ZMY
Reverse flattened and obscured by graffito of lion
RPC I: 2481; Klose 1987: II
124.1 - $17 \quad 4.53 \quad$ F49

Denomination suggested by RPC I, p. 418; Klose preferred a half. See discussion of this coin in Section 3.3.1.

77-78 AD Titus 1 assarion Head r. laur. TITOC AYTOKPAT $\Omega$ P KAICAP
Herakles standing holding kantharos, club and lionskin
ITA $\Lambda$ IK $\Omega$ AN $\Theta \Upsilon$ IOY IIAC АГP $\Omega$ N ZMYP
RPC II: 1007; M7 GR 120; Klose 1987: XXXVI
$\begin{array}{lllll}125.1 & 12 & 22 & 4.22 & \text { NoEx }\end{array}$
Klose called this a 2-assaria coin; RPC II (p. 24) and Johnston (2007, table 74), 1 assarion.

138-141 AD Antoninus Pius 4 assaria
Head r. laur. [...]AINIOC ANTSNEINOC
Cybele enthroned l. with tympanum and patera, lion at feet ЕПI C POҮФЄINHC ФOҮСКОY $\Theta \Upsilon$, in ex. CMYP
Klose 1987: XLVII series D; RPC IV: temp. no. 234
$\begin{array}{lllll}126.1 & 6 & 28 & 13.85 & \text { Wadi B }\end{array}$

First or second century AD
Head of Dionysos? r. with low bun and one lock trailing down neck, wreathed?; behind head, 1. to r. vertically, A?ME $\Omega \mathrm{N}$ Amphora with upright handles, to r. NMYP and to l. top down $\mathrm{IAN} \Omega \mathrm{N}$, vertically
$\begin{array}{lllll}127.1 & 12 & 24 & 7.57 & \text { F49 }\end{array}$
Not previously published?; N is sic for Z . The diam. and wt. conform to the $1 \frac{1}{2}$ or 2 assaria of Smyrna in the first century AD.

$\begin{array}{lllll}129.1 & 12 & 29 & 10.85 & \text { MMS }\end{array}$
Denomination suggested by Johnston (2007, table 4b); Klose (1987) preferred 4 assaria.

## 241-244 AD Tranquillina

$11 / 2$ assaria
Bust r. dr. ФOVP TPANKY $\Lambda \Lambda \in I N A C$
Herakles standing with kantharos and club
CMYPNAI $\Omega \mathrm{N}$ Г $\mathrm{N} \in \Omega K O P \Omega \mathrm{~N}$
Klose 1987: LXXI Series B; RPC VII.1: 315; M7 GR 122

| 130.1 | 6 | 22 | 3.42 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 130.2 | 6 | 22 | 4.00 | NoEx |

Denomination suggested by Johnston (2007, table 4b); Klose (1987) preferred 2 assaria: RPC VII.1, p. 83 as next-to-smallest denomination, without valuing in assaria.

## Teos

Third century AD
Turreted bust of young Dionysos r., thyrsus over shoulder $T \in \Omega C$
Dionysos facing, pouring from kantharos, holding thyrsus
CTP AVP ЄPMOГЄNOVTHI $\Omega \mathrm{N}$
BMC Ionia, p. 318, no. 65
$\begin{array}{lllll}131.1 & 6 & 22 & 5.21 & \text { F49 }\end{array}$

CARIA
Antiochia ad Maeandrum
238-268 AD
Bust of young Senate r. IЄPA CYN K
Tyche standing with cornucopiae and rudder ANTIOXE $\Omega$ N
BMC Caria, p. 17, no. 19
$\begin{array}{lllll}132.1 & 6 & 23 & 5.55 & M M S / N\end{array}$

Acrasus
193-211 AD Septimius Severus
Head r. laur. AY KA $\Lambda$ C CЄOYHPOC
Asklepios resting on serpent-staff AKPACI $\Omega \mathrm{T} \Omega \mathrm{N}$
BMC Lydia, p. 13, no. 22
$\begin{array}{lllll}133.1 & 7 & 20 & 3.72 & M M S / N\end{array}$

Apollonis
69-125 AD
Bust of young Senate r. $\Theta \in O N$ CYNK 1 HTON
Bust of Apollo? r. АППО $\Lambda \Lambda \Omega-И I \Delta Є[\Omega \mathrm{~N}]$
RPC II: 952
$\begin{array}{lllll}134.1 & 12 & 17 & 3.30 & E H\end{array}$

## Attalea

Late second to third century AD
Head of Dionysos r. wreathed in ivy, no legend Pan advancing l. with pedum and grapes ATTA $\Lambda € A T \Omega$ N
BMC Lydia, p. 26, nos. 3-4; M7 GR 135

| 135.1 | 6 | 16 | 2.05 | НоВ |
| :--- | :--- | :--- | :--- | :--- |

## Dioshieron

27 BC-AD 37 Probably Tiberius
Head r. laur. $\operatorname{\Sigma EBA\Sigma TO} \Sigma$
Head of Zeus r. laur. $\triangle$ IO $\Sigma$ IEPIT $\Omega \mathrm{N}$
RPC I: 2558
$\begin{array}{lllll}136.1 & 6 & 19 & 2.31 & \text { ByzFort }\end{array}$

100-200 AD
Turreted bust of Tyche r. ПО $\triangle$ IC
River god reclining $\triangle \mathrm{IOCI} €$, in ex. P $€ I T \Omega \mathrm{~N}$
RPC IV: temp. no. 1434
$\begin{array}{lllll}137.1 & 12 & 19 & 4.40 & M M S / N\end{array}$

## Gordus Julia

193-250 AD
Bust of mature Herakles r., no legend
Telesphoros facing IOY $\wedge$ I $Є$ ГOP $\triangle \mathrm{HN} \Omega \mathrm{N}$
BMC Lydia, p. 92, no. 16
$\begin{array}{lllll}138.1 & 12 & 14 & 1.42 & \text { NoEx }\end{array}$

Hyrcanis
50-100 AD?
Head of Senate r. laur. I $\mathcal{P}$ PACYN K $\triangle$ HTOC
Recumbent river god looking l., with cap? and horizontal reed YPKAN $\Omega \mathrm{N}$ [EПI M?], in ex. BETTIO in mirror image Imhoof-Blumer 1923: 314 var.
$\mathbf{1 3 9 . 1} \quad 12$
Imhoof-Blumer
(1923) records the type with the legend in the l. field $\Pi I \triangle A C O C$ and nothing in exergue; ImhoofBlumer 1895, p. 235, no. 3 lists a coin of Hyrcanis with an obverse of Trajan and the name of Bettios on the reverse. My thanks to Carmen Arnold-Biucchi for tracking down Bettios.

## Mostene <br> 50-54 AD Claudius

Jugate head and bust of Claudius and Agrippina r.
TI K $\Lambda$ Aฯ $\triangle$ ION KAICAPA $\Theta Є А N ~ А Г Р І П П I N A N ~$
Rider on horse carrying labrys
$Є П I ~ П Є \triangle A N I O Y ~ K A I C A P Є \Omega N ~ M O C T H N \Omega N$
RPC I: 2461; M7 GR 166
140.1 $12 \quad 20 \quad 5.91 \quad$ MMS/S

Stumpf (1991, no. 203) dates this 49/50 or 50/1 AD.

## Nacrasa

Second century AD
Bust of young Senate r. $\Theta \in O N$ CYNK $\Lambda H T O N$
Tyche head r. turreted NAKPACEIT $\Omega$ N
BMC Lydia, p. 166, no. 10

| 141.1 | 6 | 18 | 2.60 | NoEx |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 161-180 AD |  |  |  |  |

Head of mature Herakles r. bare $Є \Pi I$ MI $\Lambda \Omega$ NOC
Stag walking r. NAKРАСЄИ $\Omega$
BMC Lydia, p. 167, no. 13; RPC IV temp. no. 1356
$\begin{array}{lllll}142.1 & 12 & 15 & 2.05 & M M S / N\end{array}$

## Saitta

193-211 AD Julia Domna
Bust r. no diadem IOYAIA CЄBAC
Tyche standing l. holding rudder in r . and cornucopiae in 1 . CAITTHN $\Omega \mathrm{N}$
ANS no. 1998.18.67

| $\mathbf{1 4 3 . 1}$ | 12 | 17 | 2.58 | EH |
| :--- | :--- | :--- | :--- | :--- |

200-250 AD Severan
Bust of Tyche r. turreted CAITTAI
Herakles with club over shoulder drags Cerberus r.
CAITTHN $\Omega \mathrm{N}$
SNG vAulock 8: 3090, same dies
$\begin{array}{lllll}144.1 & 6 & 18 & 3.50 & M M S / N\end{array}$

Sardis
10 BC-AD 14 Augustus 1 assarion
Head r., bare $\Sigma$ EBAETOY
Zeus Lydios standing. $\Sigma \mathrm{AP} \Delta \mathrm{IAN} \Omega \mathrm{N} \Delta \mathrm{IO} \Delta \Omega \mathrm{PO} \Sigma$
ЕРМОФІЛОҮ
RPC I: 2986; M7 GR 267

| 145.1 | 12 | 21 | 8.45 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 145.2 | 12 | 20 | 4.66 | MMS/N |
| 145.3 | 12 | 20 | 2.61 | MMS |
| 145.4 | 12 | 19 | 8.89 | ByzFort |
| 145.5 | 12 | 19 | 5.48 | NoEx |
| 145.6 | 11 | 19 | 4.20 | MMS |
| $\mathbf{1 4 5 . 7}$ | 12 | 19 | 4.00 | MMS/S |
| 145.8 | 12 | 18 | 4.16 | NoEx |
| 145.9 | 12 | 18 | 3.70 | MMS |
| 145.10 | 10 | 18 | 2.99 | LAW |

Rev. legends of nos. 147.2 and 147.7 clearly end in -OY.
For denomination, for the Augustan through Flavian period, see note under type 152 .

Head r., bare $\Sigma$ EBA $\Sigma$ TOY
$\Sigma \mathrm{AP} \triangle \mathrm{IAN} \Omega \mathrm{N} \triangle \mathrm{AMA} \Sigma$ in wreath
RPC I: 2987; M7 GR 268

| 146.1 | - | 21 | 6.26 | F55 |
| :--- | :--- | :--- | :--- | :--- |
| 146.2 | - | 19 | 6.20 | MMS/S |

Head r., bare $\Sigma E B A \Sigma T O Y$
Demoi of Pergamum and Sardis $\Sigma A P \Delta I A N \Omega N$
KAI ПЕРГАМНN $\Omega$ N MOY $\Sigma A I O \Sigma$
RPC I: 2988; M7 GR 269

| $\mathbf{1 4 7 . 1}$ | 12 | 19 | 6.36 | MMS/S |
| :--- | :--- | :--- | :--- | :--- |
| 147.2 | 12 | 18 | 6.28 | F49 |
| 147.3 | 5 | 18 | 3.54 | NoEx |

Last coin n.s.; fieldnotes record type but not the legend.
Mousaios is recorded as strategos in Sardis in 5 BC, (Buckler and Robinson 1932, no. 8, pt. 1). RPC I, p. 487 suggested that the portrait on this coin is similar to that on coins minted by the magistrates Damas and Diodoros, and "a similar issue from Pergamon (2362), dating to about AD 1."

10 BC-AD 14?
1 assarion
Head of young Herakles r. $\Sigma A P \Delta I A N \Omega N$ to .
Apollo with hawk, in wreath, to r. MOY $\Sigma A I O \Sigma$
$\mathbf{1 4 8 . 1} 1 \begin{array}{lllll} & 1 & 17 & 5.46 & M M S / S\end{array}$
Concave reverse. This coin is given to the reign of Augustus due to the placement of the city name on the obverse, the style of the head of Herakles (Johnston's "later' generous
proportions." Buttrey et al. 1981, p. 80), and the relatively broad flan. The magistrate's name is not attested on Hellenistic issues of Herakles/Apollo.

Probably Sardis mint
Head r., bare, illeg. legend Worn smooth or illeg.

| 149.1 | - | 23 | 8.36 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 149.2 | - | 21 | 6.15 | F49 |
| 149.3 | - | 18 | 5.10 | NoEx |

14-37 AD Tiberius
Head of young Herakles r. OПINA $\operatorname{AKAMO\Sigma }$
Apollo with hawk, in wreath $\Sigma \mathrm{AP} \triangle \mathrm{IAN} \Omega \mathrm{N}$
RPC I: 2990; M7 GR 245

| 150.1 | - | 17 | 4.35 | AT-Pac |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 5 0 . 2}$ | 12 | 16 | 6.20 | NoEx |
| 150.3 | 12 | 16 | 5.35 | MD2 |
| 150.4 | 12 | 15 | 5.91 | LAW |
| 150.5 | 12 | 17 | 4.20 | ByzFort |

14-37 AD
Head l., bare ГЕPMANIKOE KAIIAP
Athena standing $\Sigma \mathrm{AP} \triangle \mathrm{IAN} \Omega \mathrm{N}$ MNA $\Sigma \mathrm{EA} \Sigma$
RPC I: 2993; M7 GR 273

| $\mathbf{1 5 1 . 1}$ | 1 | 19 | 3.65 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 5 1 . 2}$ | 6 | 18 | 3.18 | MMS/S |
| 151.3 | 11 | 17 | 3.88 | MMS/S |
| 151.4 | 1 | 16 | 3.82 | ByzFort |
| 151.5 | 2 | 16 | 3.45 | Wadi B |
| 151.6 | 1 | 15 | 4.20 | NoEx |
| 151.7 | 1 | 14 | 3.11 | NoEx |

17-37 AD
Togate figure of Tiberius raising Tyche of Sardis
$\Sigma E B A \Sigma T O \Sigma$ KAI $\Sigma A P E \Omega N$
Livia seated $\Sigma \mathrm{EBA} \Sigma \mathrm{TH}$ IOY $\wedge$ IO $\Sigma$ K $\Lambda$ E $\Omega \mathrm{N}$ KAI MEMN $\Omega \mathrm{N}$
RPC I: 2991; M7 GR 270
$\begin{array}{lllll}152.1 & 11 & 17 & 3.69 & M M S / S\end{array}$
Denomination suggested in RPC II, p. 199.

17-19 AD
Head r., bare ГEPMANIKO $\Sigma$ KAI $\Sigma A P E \Omega N$
Head r., bare $\triangle$ POY $\Sigma \mathrm{O} \Sigma \Sigma \mathrm{AP} \triangle \mathrm{IAN} \Omega \mathrm{N}$
RPC I: 2992; M7 GR 272

| 153.1 | 12 | 17 | 2.46 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 5 3 . 2}$ | 12 | 17 | 2.40 | NoEx |

1 assarion
$\begin{array}{lllll}153.3 & 12 & 16 & 2.62 & \text { MMS }\end{array}$
Denomination suggested in RPC II, p. 199.

28-29 AD
2 assaria
Drusus and Germanicus seated $\triangle$ POY $\Sigma \mathrm{O} \Sigma$ KAI
ГЕPMANIKO $\Sigma$ KAI $\Sigma A P E \Sigma$ NEOI $\Theta E O I ~ Ф I \Lambda A \Delta E \Lambda Ф O I$, restruck legend
Oak and laurel wreath enclosing KOINOY AEIA $\Sigma$ around flan: ГАI $\Omega$ A $\Sigma$ INNI $\Omega$ ПО $\Lambda \Lambda I \Omega N I$ AN $\Theta \sqcap П А П \Omega$, restruck RPC I: 2995; M7 GR 274

| 154.1 | 12 | 28 | 14.29 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 154.2 | - | 28 | 13.49 | MMS/S |
| 154.3 | - | 27 | 12.87 | MMS |
| 154.4 | 10 | 21 | 13.26 | NoEx |

The mint is given to Sardis by RPCI, p. 487, over the objections of others, including Johnston (2007, p. 245 n. 392), based on the provenance of the coins. These four examples solidify the argument in RPC. For the denomination, see RPC I, p. 488; Johnston 2007, table 74; RPC II, p. 199.

45-54 AD Claudius half assarion
Head l. bare TI K $\Lambda$ AY $\Delta I O \Sigma$ KAİAP
Head of mature Herakles l. $\Sigma A P \Delta I A N \Omega N$
RPC I: 2996; M7 GR 275
$\begin{array}{lllll}155.1 & 12 & 16 & 3.20 & \text { HoB }\end{array}$
Second specimen not in M7 though identified by Johnston.
Denomination suggested in RPC II, p. 199.

60 AD Nero 1 assarion
Head r. laur. NEP $\Omega$ N KAI $\Sigma A P$
Dionysos standing with panther EПI MIN $\Delta$ IOY
$\Sigma A P \Delta I A N \Omega N ; ~ \Sigma T P A ~ T O B(l i g$.
RPC I: 2997

| 156.1 | 12 | 18 | 5.48 | MD2 |
| :--- | :--- | :--- | :--- | :--- |
| 156.2 | 12 | 17 | 4.99 | LAW |
| 156.3 | 12 | 16 | 5.01 | LAW |

Denomination suggested in RPC II, p. 199.

65 AD
Head r. laur. NEP $\Omega$ N KAICAP
Zeus Lydios EПI TI K
RPC I: 3007; M7 GR 276
$\mathbf{1 5 7 . 1} 12 \quad 18 \quad 4.14 \quad$ F49
See discussion of this coin in Section 3.3.1.
$\mathbf{1 5 7 . 2} 1 \begin{array}{lllll}17 & 17.40 & \text { ThSt }\end{array}$
See discussion of this coin in Section 3.2.2.
Denomination suggested in RPC II, p. 199.

65 AD
Bust of young Senate r. $\Theta \in O N$ CYNK $\Lambda H T O N$
Zeus Lydios standing ЄПI TI MNACЄOY CAP $\triangle I A N \Omega N$
RPC I: 3008; M7 GR 246

| 158.1 | 6 | 19 | 3.60 | ByzFort |
| :--- | :--- | :--- | :--- | :--- |
| 158.2 | 6 | 18 | 4.92 | MMS/S |
| 158.3 | 6 | 18 | 3.50 | NoEx |

Denomination suggested in RPC II, p. 199.
half assarion
CAP $\triangle$ IAN $\Omega \mathrm{N}$

Nike 1. with wreath and palm CЄBACTH
RPC I: 3010
$\begin{array}{lllll}159.1 & 6 & 16 & 3.66 & \text { ByzFort }\end{array}$
Denomination suggested in RPC II, p. 199.

10 BC-AD 65 Augustan or Julio-Claudian 1 assarion Bust r. bare
Zeus Lydios standing, illeg. inscription

| 160.1 | 2 | 18 | 3.50 | NoEx |
| :--- | :---: | :---: | :---: | :---: |
| Denomination suggested in RPC II, | p. 199. |  |  |  |

Bust r. bare
half assarion
Illeg.
$161.1 \quad-\quad 16 \quad 3.16 \quad$ Wadi B
Denomination suggested in RPC II, p. 199.

70-73 AD Flavian 1 assarion
Helm. head of Athena/Roma r. ЄПI TI K $\Lambda$ AҮ ФIムINOY
CTPA
Tetrastyle temple with seven stars in pediment
CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$ MAPK€ $\Lambda \Lambda O \Upsilon$, to l. TO (lig.), to r. B, in ex. ЄПI

| 162.1 | 1 | 18 | 5.34 | ByzFort |
| :--- | :--- | :--- | :--- | :--- |

RPC II: 1305; M7 GR 247
Denomination suggested in RPC II, p. 199.

As above, but head of Athena/Roma l.
As above, but nothing in pediment
RPC II: 1306; M7 GR 248

| 163.1 | 1 | 22 | 4.42 | MMS, o/s? |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 6 3 . 2}$ | 6 | 20 | 4.10 | HoB |

RPC I (p. 488, "Exclusions" no. 4) noted that Imhoof-Blumer (1890, p. 198, no. 616) misread the overstriking sequence of the coin; RPC authors dated the coin to the Flavian, not Neronian period. The denomination is given as $11 / 2$ assaria (RPC I, p. 488; Johnston 2007, table 74) or 1 assarion (RPC II, p. 199). Note the stylistic similarity to coins of Ilium.

75 AD
1 assarion
Bust of young Dionysos r. ЄПI Фム ЄІСІГОNO§
Zeus Lydios standing CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$ CTPA (lig.)
RPC II: 1316
$\begin{array}{lllll}164.1 & 12 & 20 & 5.76 & \text { F55 }\end{array}$
Denomination suggested by RPC II, p. 199.
half assarion
Laur. head of young Herakles r. with lionskin CAP $\triangle I A N \Omega N$
Herakles standing l. with club and lionskin
CAP $\triangle I A N \Omega N$, in wreath
RPC II: 1310 var. (no wreath noted); M7 GR 250
$\begin{array}{lllll}165.1 & 8 & 15 & 2.82 & \text { NoEx }\end{array}$
Denomination from Johnston 2007, table 74; RPC II, p. 199.

70-80 AD? 1 assarion
Bust of young Senate r. IЄPA CYNK
Tetrastyle temple CAP $\triangle$ IAN $\Omega \mathrm{N}$
RPC II: 1309; M7 GR 254

| 166.1 | 7 | 18 | 2.77 | MMS/S <br> (leaded bronze) |
| :--- | :--- | :--- | :--- | :--- |
| 166.2 | 2 | 18 | 3.92 | F49 (disc in pediment) |

RPC II suggested a Vespasianic date, while Johnston (in M7, p.
82) favored 100-120, in part due to the style of the coin and in part to the direction of the legend, which runs clockwise. Coins minted under Vespasian have obverses with counterclockwise legends. Johnston also noted a broken-crossbar A, which is found on coins of Marciana and Plotina; thus, she thought the temple on the reverse was Sardis's first neokorate temple, probably to Hadrian. The authors of RPC noted uncertainty about the coin. They thought the style fitted better in the Vespasianic period, while the legend was more typical of second century issues. Coin no. 166.1 was residual in a Late Roman context. Coin no. 166.2 was found on a packed earth floor beneath fall from a roof collapse; the pottery associated with the fall cannot distinguish between the termini of 80 and 120. Denomination suggested in RPC II, p. 199.

## 79-81 AD Titus

Bust r. laur. cuir. TITO...OPO $\Sigma$
Emperor sacrificing at altar ЕПI T Ф $\Lambda$ ЄІСІГОNO§
RPC II suppl. 2: 1315a
167.1 $7 \quad 23 \quad 10.43$ NoEx

Johnston (2007, table 74) saw this as a 2-assaria coin; the diameter and weight do not fit comfortably into the table of denominations in RPC II, p. 199, but RPC II: 1304, also minted under Titus at Hierapolis, does appear to be the same denomination as this coin.


RPC II, p. 199 prefers a 2-assaria coin, Johnston (2007, table 74), 3-assaria. See note about dating the coin, Section 2.3.

End of the first-beginning of the second century AD?
Bust of young Senate r. dr. I $€ P A$ CrN K $\Lambda H T O C$
Hexastyle temple CAP $\triangle \operatorname{IAN} \Omega \mathrm{N}$
RPC III: 2410; M7 GR 252 or 255

| 170.1 | 7 | 20 | 2.48 | NoEx, n.s. |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 7 0 . 2}$ | 11 | 19 | 3.01 | MMS/N |
| 170.3 | 12 | 18 | 3.58 | CW6 |
| 170.4 | 1 | 15 | 3.08 | NoEx |

(same dies as above and M7 GR 252)
No coin comes from a datable context. Johnston's earlier group (252) has clockwise legends, the letter form A and a reverse legend in two parts. Her later group (255) can have a clockwise or a counterclockwise broken legend on the obverse, with broken crossbar As. The reverse can have the legend broken in two or three places, with a broken crossbar A. When I returned to her series, I only found one coin with a clear broken crossbar A. However, the coins in her 252 series had temples with a disk in the pediment and acroteria. The coins she grouped in the other series (255), when the details could be ascertained, had either acroteria or disks, but not both. When As were visible, they appeared to be formed without the broken crossbar, save one. Hence, I have combined the two series that Johnston separated, as they appear to be part of a large issue, and the die cutters appear to have introduced variants on the initial design. The authors of RPC III reached the same conclusion, calling the coin Trajanic/Hadrianic.

112 AD
Marciana
1 assarion
Bust r. dr. MAPKIA CEBACTH
Pelops galloping r. CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$ ПЄ $К О \Psi$
RPC III: 2398; M7 GR 283
$\begin{array}{lllll}171.1 & 6 & 19 & 2.72 & \text { ByzFort }\end{array}$

112 AD
Plotina
1 assarion
Bust r. П $\Lambda \Omega$ TЄINA CEBACTH
Pelops galloping r. CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$
RPC III: 2397; M7 GR 284

| 172.1 | 7 | 21 | 5.01 | ThSt |
| :---: | :---: | :---: | :---: | :---: |
| 172.2 | - | 20 | 2.30 | BS-W15, cm. App. 1 |
|  |  | Rev. worn smooth, prob. i.d. |  |  |
| 172.3 | - | 20 | 3.10 | ByzFort |
| Rev. worn smooth, prob. i.d. |  |  |  |  |

112 AD Marciana or Plotina 1 assarion
Bust r .
Pelops galloping r., legend illeg.

| 173.1 | 12 | 19 | 3.85 | EH |
| :--- | :--- | :--- | :--- | :--- |

98-117 AD Trajanic half assarion
Bust of young Dionysos r. wreathed in ivy CAP $\Delta \operatorname{IAN} \Omega N$
Thyrsus bound with taenia, in r. field bee or fly
CTP $\Lambda$ O IO $\Lambda$ IB $\Omega$ NIANOV
RPC III: 2393; M7 GR 256

| 174.1 | 8 | 17 | 2.21 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 174.2 | 12 | 15 | 2.80 | F49 |
| 174.3 | 6 | 15 | 2.37 | NoEx |
| 174.4 | - | 15 | 2.10 | NoEx |

117-138 AD Sabina 2 assaria
Bust of Sabina r. CABEINA CEBACTH
Recumbant river god holding cornucopiae
CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$, in ex. ЄPMOC
RPC III: 2405; M7 GR 287

| 175.1 | 12 | 24 | 7.51 | NoEx |
| :--- | :--- | :--- | :--- | :--- |

100-140 AD
half assarion
Head of young Herakles r. lionskin knotted at neck
Bow in case, club, insect CAP $\triangle I A N \Omega N$
SNG Cop: 510; RPC III not; M7 GR 257

| 176.1 | 6 | 17 | 2.20 | EH |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 7 6 . 2}$ | 6 | 16 | 2.52 | MMS/S |

140-161 AD Marcus Aurelius as Caesar 1 assarion?
Bust r. bare M AVPHへIOC KAICAP VП
Legend in wreath CAP/ $\Delta \mathrm{IAN} / \Omega \mathrm{N} \in \Pi / \mathrm{I} \triangle \mathrm{APIOV}$
BMC Lydia, p. 258, no. 141; M7 GR 290
$\begin{array}{lllll}177.1 & 12 & 22 & 2.97 & \text { Wadi B }\end{array}$

Bust r. bare M AҮPHЛIOC KАICAP ҮПА 1 assarion?
Winged caduceus $\in \Pi I$ NЄIKOMAXOY CAP $\triangle I A N \Omega N$
BMC Lydia, p. 258, nos. 143-144; M7 GR 292

| $\mathbf{1 7 8 . 1}$ | 6 | 23 | 3.32 | Wadi B, bent and cut |
| :--- | :--- | :--- | :--- | :--- |
| 178.2 | 6 | 22 | 3.20 | Wadi B |
| 178.3 | 6 | 22 | 3.12 | Wadi B |

See discussion of the Wadi B coins in Section 3.3.2.

| 178.4 | 6 | 21 | 3.06 | ByzFort |
| :--- | :--- | :--- | :--- | :--- |
| 178.5 | 6 | 21 | 2.82 | Wadi B |
| 178.6 | 6 | 20 | 3.29 | HoB |
| 178.7 | 6 | 20 | 3.00 | NoEx |
| 178.8 | 6 | 19 | 2.60 | MMS |

These coins show the Sardis mint style nicely: dies are slightly small for the flan, which is large and thin. The engravers tend to leave negative space, the legends have large letters pushed to the edge of the die, and often the reverses simply read $\mathrm{CAP} \triangle \mathrm{IAN} \Omega \mathrm{N}$. The style begins in the late Flavian period (see BMC Lydia, p. 246, no. 73, for which see Section 2.3) and can be seen in one traveling engraver who made dies for a variety of cities, including Sardis, Smyrna, Hierapolis, Ancyra, and Tripolis (Johnston 1983, p. 60). By the third century, the style is rarer, as legends become longer and more elements are placed on the reverses.

180-193 AD Commodus 1 assarion
Bust r. bare M AVP KOMMO $\Delta$ OC KA
Cult statue of Kore of Sardis enthroned between wheat ear and poppy CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$
BMC Lydia, p. 259, no. 145

| 179.1 | 12 | 21 | 4.68 | NoEx |
| :--- | :--- | :--- | :--- | :--- |

## 139-144 AD Faustina Major

4 assaria
Bust r. dr. $\Theta € A$ ФAҮCT€INA
Hexastyle temple with cult statue within
ЄПI К $\triangle$ ФРОNT $\Omega$ NOC ACIAPX CTPАТНГО А CAP $\triangle I A N \Omega N$ RPC IV: 1426; M7 GR 289

| 180.1 | 6 | 35 | 35.35 | Wadi B |
| :--- | :--- | :--- | :--- | :--- |
| 180.2 | 6 | 35 | 21.48 | F55 |
| 180.3 | 6 | 33 | 20.32 | NoEx |

For a discussion on the meaning of Asiarch, see Kampmann 1997, p. 88.

138-169 AD
half assarion
Bust r. dr. ФAҮCT(Є)INA CЄBACTH
Aphrodite standing l. with apple CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$
RPC IV: temp. no. 1427; M7 GR 288
$\begin{array}{lllll}181.1 & 6 & 19 & 4.90 & \text { NoEx }\end{array}$

138-190 AD Antonine half assarion
Head of mature Herakles 1.
Omphale walking r. CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$
BMC Lydia, p. 247, nos. 79-80; M7 GR 253

| 182.1 | 6 | 22 | 3.64 | EH |
| :--- | :--- | :--- | :--- | :--- |
| 182.2 | - | 22 | 3.52 | NoEx |
| 182.3 | - | 21 | 3.64 | MMS/N |
| 182.4 | 6 | 19 | 4.95 | NoEx |
| 182.5 | 6 | 18 | 3.75 | NoEx |

Head of young Herakles r. laur. half assarion
Herakles standing with club and lionskin CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$
BMC Lydia p. 247, no. 81; M7 GR 249

| 183.1 | 6 | 19 | 5.03 | MD1/S |
| :--- | :--- | :--- | :--- | :--- |
| 183.2 | - | 18 | 4.27 | MMS/N |

Johnston, in M7, dated this issue to ca. 75, due to the counterclockwise legends, found on coins of Nero and Vespasian, but noted the lettering and style are uncharacteristic of Neronian coins of Sardis.

140-160 AD
1 assarion
Head of young Dionysos r. $\in \Pi I \triangle A I P O \Upsilon$
Torch CAP $\triangle$ IAN $\Omega$ N
SNG vAulock: 3139; M7 GR 259
$\mathbf{1 8 4 . 1} 12 \quad 21 \quad 2.50 \quad$ MMS/N
Same die as 184.3 and M7 C61.0059

| 184.2 | 12 | 21 | 2.32 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{1 8 4 . 3}$ | 12 | 20 | 1.92 | NoEx, cm. App. 1 |
| 184.4 | 12 | 19 | 2.31 | HoB |

The magistrate's name is also on coins of Antoninus Pius and Marcus Aurelius (BMC Lydia, p. 257, no. 138; p. 258, nos. 141-144) and the style of the engraving looks much like the latter (especially with isolated cult implements). The winged caduceus reverse of Aurelius with a different magistrate's name is surely by same die engraver. He makes small dies for the flan, beautifully proportioned busts (with heads tilted slightly up), leaving much room between the head and beaded border (with dots so small it almost looks like a line border) and a great deal of space between sparse letters on legends. Flans are thin.

| 117-180 AD |  | NIC OR | NTONINE | 2 assaria | 200-220 AD | Seve |  |  | assarion |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bust of Zeus | os 1. | C $\Lambda \Upsilon$ |  |  | Bust of Tyche r., turreted CAP $\triangle$ IC |  |  |  |  |
| Roma seated | ding | @EA | MH |  | Cult statue of Kore CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$ B $\mathrm{N} \in \Omega \mathrm{KOP} \Omega \mathrm{N}$ |  |  |  |  |
| BMC Lydia, | , no | RPC | IV not |  | BMC Lydia, p. 249, nos. 90-91; M7 GR 261 |  |  |  |  |
| 185.1 - | 27 | 6.72 | NoEx |  | 192.1 | 22 | 4.48 | CW32 |  |
|  |  |  |  |  | 192.212 | 20 |  | MMS/S |  |
| 197-213 AD | Juli | omna |  | 1 assarion? | 192.3 | - | - NoEx |  |  |
| Bust r. dr. IOY | A CE | CTH |  |  | The style of carving the die (including the strong beaded |  |  |  |  |
| Zeus Lydios C | $\triangle \mathrm{IA}$ | B N | KOP $\Omega \mathrm{N}$ |  | border and use of negative space) and thinness of flan are |  |  |  |  |
| BMC Lydia, | , no |  |  |  | traits which are seen in late first- and second-century coins |  |  |  |  |
| 186.16 | 20 | 2.64 | Wadi B |  | of Sardis. |  |  |  |  |
| Denominations for ca. 200-260 follow Johnston (2007, pp. |  |  |  |  |  |  |  |  |  |
| 21-23). Spoer this approach |  | (2009, | 223-24) | agrees with | 212-217 AD |  |  | half assarion |  |
|  |  |  |  |  | Bust of Zeus r. laur. $\mathrm{J} \in \mathrm{VC} \Lambda \mathrm{V} \triangle \mathrm{IOC}$ |  |  |  |  |
|  |  |  |  | 1 assarion | Young Herakles standing with club and lionskin |  |  |  |  |
| Cult statue of Kore of Sardis between ear of wheat and poppy CAP $\triangle \mathrm{IAN} \Omega \mathrm{N}$ B $\mathrm{N} \in \Omega K O P \Omega \mathrm{~N}$ |  |  |  |  | CAP $\triangle I A N \Omega N$ • |  |  |  |  |
|  |  |  |  |  | BMC Lydia, p. 248, nos. 85-86; M7 GR 262 |  |  |  |  |
| BMC Lydia, p. 260, no. 149; M7 GR 293 |  |  |  |  | 193.1 | 15 | 1.60 | MMS |  |
| 187.16 | 19 | 3.65 | RT |  |  |  |  |  |  |
|  |  |  |  |  | 218-222 AD Elagabalus |  |  |  | 2 assaria |
|  |  |  | uncertain | nomination | Bust r. rad. dr. cuir. AVK MA ANT $\Omega$ N€INOC |  |  |  |  |
| Bust l. as Tyche, wearing kalathos and holding cornucopiae IOV 1 IA CEBACTH |  |  |  |  | Athena Nikephoros CAP $\triangle I A N \Omega N$ B $\mathrm{N} \in \Omega \mathrm{KOP} \Omega \mathrm{N}$ |  |  |  |  |
|  |  |  |  |  | M7 GR 302 |  |  |  |  |
| Prize crown with palm on inscribed base ЄПI Г К |  |  |  |  | 194.1 |  |  |  |  |
| MI $\Theta P O V$ APX A CAP $\triangle I A N \Omega N$ B $N \in \Omega K O P \Omega N$; on base, XPVCAN $\Theta$ INA |  |  |  |  | BMC Lydia, p. 262, no. 161 lists only for Caracalla; Johnston (1982) more carefully differentiates between Caracalla and |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BMC Lydia, p. 260, no. 150; M7 GR 294 |  |  |  |  | Elagabalus. |  |  |  |  |
| 188.17 | 23 | 14.53 | MMS |  |  |  |  |  | 3 assaria |
| This coin does not fit Johnston's denominations. |  |  |  |  | Bust r. laur. cuir. palud. AVT K M AVP• ANT 2 NEINOC |  |  |  |  |
|  |  |  |  |  | Cult statue of Kore of Sardis, surrounded by wheat ear, bucranium, poppy and wreath, ЄПI ЄРМОФІЛОV |  |  |  |  |
| Bust r. dr. IOYイIA C€BACTH |  |  |  |  | APA[X]-CAP $\triangle I A N I \Omega N$ TP[IC NЄ 2 KOP] |  |  |  |  |
| Eagle with Ganymede CAP $\triangle$ IAN $\Omega$ N B $\mathrm{N} \in \Omega \mathrm{KOP} \Omega \mathrm{N}$ |  |  |  |  | Paris FG 1284, var. reverse legend; Evans 2015 |  |  |  |  |
| BMC Lydia, p. 261, nos. 155-156 |  |  |  |  | $\begin{array}{lllll}195.1 & 7 & 30 & 10.38 & \text { NoEx }\end{array}$ |  |  |  |  |
| 189.112 | 23 | 4.65 | MMS/N |  | Obverse die same as Paris coin; see Section 2.4. |  |  |  |  |
| Bust r. dr. illeg. legend |  |  |  |  | 218-222 AD Julia Maesa 2 assaria |  |  |  |  |
| Worn smooth |  |  |  |  | Bust r. dr. IOYイIA MAICA C€ |  |  |  |  |
| 190.1 - | 22 | 5.67 | ByzFort |  | Mên standing | P $\triangle$ I | N TP | NЄ $\Omega$ KOP $\Omega$ |  |
| Mint prob., not certain. |  |  |  |  | BMC Lydia, p. 266, no. 174 |  |  |  |  |
|  |  |  |  |  | 196.17 | 28 | 4.08 | MMS/S |  |
| 212-217 AD Caracalla 2 assaria |  |  |  | 2 assaria |  |  |  |  |  |
| Head r. rad. AVT KAI MAVP ANT 2 NEINOC |  |  |  |  | Bust r. dr. on crescent IOYAIA MAICA AV |  |  |  |  |
| Tyche standing with cornucopiae and rudder |  |  |  |  | Mên standing CAP $\triangle \mathrm{IAN} \Omega \mathrm{N} \cdot \bullet \mathrm{B}$ NE $\Omega \mathrm{KOP} \Omega$, in ex. N |  |  |  |  |
|  |  |  |  |  | ( B begins after scepter, recut legend) |  |  |  |  |
| BMC Lydia, p. 263, no. 162; M7 GR 299 |  |  |  |  | Evans 2015 |  |  |  |  |
| 191.16 | 26 | 7.98 | MMS/N |  | 197.16 | 23 | 6.14 | F49 |  |



Peltae
193-213 AD Caracalla
Head of youthful Caracalla, r. rad. M AY ANTUNEINOC
Tyche standing with rudder and cornucopiae П€ $\Pi \mathrm{THN} \Omega \mathrm{N}$ CTP TATAPI $\Omega N O C$

BMC Phrygia, p. 351, no. 26, slight var. in rev. legend
$\begin{array}{lllll}211.1 & 6 & 22 & 4.49 & \text { Wadi B }\end{array}$

PISIDIA
Termessus Major
238-268 AD
Head of Zeus r. laur. TEPMHCCE $\Omega \mathrm{N}$
Solymus seated l. on throne AVTONOM $\Omega$, in ex. N
BMC Lycia, p. 274, no. 48
$\begin{array}{lllll}212.1 & 11 & 29 & 13.75 & \text { MMS }\end{array}$

PHRYGIA?
Prymnessus?
Second or third century AD
Bust of Senate r. laur. [ $\Theta]$ EONC - [YNK $]$ ]TON
Cybele enthroned with two lions at feet
П-VHN-HCO[...]C
$\begin{array}{lllll}213.1 & 12 & 21 & 5.07 & \mathrm{MMS} / \mathrm{N} \text {, lathe hole }\end{array}$ in rev.
LYCIA
Termessus Minor?
17-37 AD Tiberius
Bare head of Tiberius r .
Galloping horse r . [...]-O[I]
RPC I: 3360, i.d. poss.
$214.1 \quad-\quad 18 \quad 4.50 \quad$ ByzFort
CILICIA
Pompeiopolis (Soli)
161-169 AD MARCUS AUrelius as Augustus
Bust of Aurelius confronting bust of Verus [...]ANT[...]
Worn smooth
cf. RPC IV: temp. no. 9736, which approximates style of

| heads, size and weight |
| :--- |
| $215.1 \quad-\quad 33$ | $24.05 \quad$ MMS/N, cm. App. 1

## Uncertain Mint

27 BC-AD 14 Augustus
Head r. bare
worn smooth

| 216.1 | - | 27 | 11.18 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 216.2 | - | 23 | 6.30 | ByzFort |


| 216.3 | - | 20 | 4.25 | ThSt |
| :--- | :--- | :--- | :--- | :--- |
| 216.4 | - | 10 | 1.18 | MMS/S, H2 |

Head r. SC, obscure rev., tessera
$216.5 \quad-\quad 20 \times 254.40 \quad$ NoEx, wreath on rev.?

1 BC-AD 10
Two standing figures
Temple with statue of emperor
Either RPC I: 2362 or 2364
$\begin{array}{lllll}217.1 & 12 & 19 & 4.42 & \text { NoEx }\end{array}$
Coin n.s., prob. Sardis mint

2 BC-AD 14
Bust r., laur. C $\Lambda E S \Lambda$ R $\Lambda$ VGVSTVS DIVI F P $\Lambda$ TER P $\Lambda$ TRINE
Gaius and Lucius standing, between shield and spear, lituus and simpulum; $\Lambda$ VGVSTI F COS DESIG PRINC
IVVENT, in ex. CLC $\Lambda$ ES $\Lambda$ RES

| 218.1 | 3 | 19 | 3.28 | MMS |
| :--- | :--- | :--- | :--- | :--- |

$\begin{array}{lllll}218.2 & 2 & 19 & 3.03 & \text { NoEx, pierced for }\end{array}$ attachment
After RIC $1^{2}$, p. 56, no. 210; on p. 55 n. 205ff. Sutherland notes that unbarred As are normal for the entire series and "imitations are of widespread provenance." May be later imitation of Augustan type from Lugdunum mint (nice style). Plated, traces of silver on both sides.
27 BC-AD 68
Male head r. (bare?)
Worn smooth

| 219.1 | - | 20 | 4.91 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| $\mathbf{2 1 9 . 2}$ | - | 18 | 3.78 | MD1/S, cm. App. 1 |
| 219.3 | - | 18 | 2.95 | MMS/S |

68-96 AD Flavian
Bust r. laur., illeg. inscription
Worn smooth

| $\mathbf{2 2 0 . 1}$ | - | 28 | 8.42 | CW32, cm. App. 1 |
| :--- | :--- | :--- | :--- | :--- |
| 220.2 | - | 26 | 10.17 | MMS |
| 220.3 | - | 19 | 4.66 | EH |
| 220.4 | - | 16 | 3.24 | ThSt, prob. Sardis mint |

50-80 AD
Bust of young Senate r., illeg. legend
Worn smooth
221.1 - 20 NoEx, prob. Sardis mint

| 141-161 AD | Faustina Major |  |  | 230.4 | 31 | 14.51 | CW32 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bust r., illeg. legend |  |  |  | 230.5 | 30 | 6.03 | MMS |
| Illeg. rev. |  |  |  | 230.6 | 29 | 10.59 | F49, cm. App. 1 |
| Poss. BMC Lydia, p. 258, no. 139, prob. Sardis mint |  |  |  | 230.7 | 29 | 8.89 | ByzFort |
| 222.1 - | 30 | 13.73 | Wadi B | 230.8 | 28 | 10.84 | NoEx |
|  |  |  |  | 230.9 | 28 | 8.30 | ByzFort |
| 161-175 AD | Faustina Minor |  |  | 230.10 | 28 | 7.61 | MMS/S |
| Bust r. |  |  |  | 230.11 | 28 | 7.35 | MMS/S |
| Worn smooth |  |  |  | 230.12 | 28 | 7.20 | BS-E14 |
| 223.1 | 25 | 7.95 | ByzFort, cm. App. 1 | 230.13 | 28 | 6.98 | MMS/S |
|  |  |  |  | 230.14 | 27 | 16.78 | MMS/S |
| First to third century AD |  |  |  | 230.15 | 27 | 7.89 | MMS/N |
| Bust r. dr. of Senate?, illeg. legend |  |  |  | 230.16 | 27 | 7.43 | ThSt |
| Zeus Lydios, clockwise up l. side [...]T[...] |  |  |  | 230.17 | 27 | 6.40 | F49, cm. App. 1 |
| 224.16 | 18 | 2.24 | F55 | 230.18 | 27 | 5.49 | ByzFort |
|  |  |  |  | 230.19 | 27 | frag'y | MMS |
| Bust of young male r., (not an emperor) bare, illeg. legend |  |  |  | 230.20 | 26 | 10.10 | ByzFort |
| Type off flan, [...]TINY\| (staff or exergual line?) |  |  |  | 230.21 | 26 | halved | MMS, prob. first |
| 225.1 | 17 | 3.95 | NoEx |  |  |  | century AD |
|  |  |  |  | 230.22 | 26 | frag'y | MMS/N |
| 75-100 AD |  |  |  | 230.23 | 25 | 8.64 | MMS/N |
| Bust of young male r . |  |  |  | 230.24 | 25 | 7.82 | MMS/N |
| Wreath containing SC |  |  |  | 230.25 | 25 | 6.45 | MMS |
| 226.16 | 11 | 0.75 | MMS/S, H2 | 230.26 | 25 | frag'y both fa | MMS, chisel cuts on es for attempted halving |
| Second century AD |  |  |  | 230.27 | 24 | 8.43 | ByzFort |
| Head r. |  |  |  | 230.28 | 24 | 7.60 | NoEx |
| Standing divinity l., illeg. legend |  |  |  | 230.29 | 24 | 6.84 | NoEx |
| 227.16 | 28 | 14.23 | MMS/N | 230.30 | 24 | 5.67 | MMS |
|  |  |  |  | 230.31 | 23 | 8.33 | F49, head r., |
| 117-138 AD | Hadrian |  |  |  |  |  | prob. first century AD |
| Head r. laur., legend illeg. |  |  |  | 230.32 | 23 | 7.42 | NoEx |
| Worn smooth |  |  |  | 230.33 | 23 | 6.90 | NoEx |
| 228.1 | 35 | 20.32 | MD1/S, cm. App. 1 | 230.34 | 23 | 6.86 | F49 |
|  |  |  |  | 230.35 | 23 | 5.21 | F49 |
| Ephesus? |  |  |  | 230.36 | 23 | 4.01 | NoEx, cm. App. 1 |
| 212-235 AD | Caracalla to Severus Alexander |  |  | 230.37 | 23 | frag'y | MMS/S |
| Bust r. laur., illeg. legend |  |  |  | 230.38 | 22 | 6.92 | MMS/S |
| Tetrastyle temple with patera in pediment, cult statue |  |  |  | 230.39 | 22 | 5.22 | MMS/N |
| inside, obscure legend below steps |  |  |  | 230.40 | 21 | 13.27 | MMS |
| 229.16 | 30 | 12.67 | NoEx, cm. App. 1 | 230.41 | 21 | 4.95 | MMS/N, cm. App. 1 |
|  |  |  |  | 230.42 | 20 | 6.00 | AT-Pac |
| Uncertain Mint |  |  |  | 230.43 | 20 | 5.93 | F49, cm. App. 1 |
| Uncertain first to third century |  |  |  | 230.44 | 20 | 5.80 | MMS |
| 230.1 | 35 | 19.00 | EH | 230.45 | 20 | 5.10 | F55 |
| 230.2 | 33 | 19.94 | CW32, sestertius? | 230.46 | 20 | 5.10 | MMS, four cm., App. 1 |
| 230.3 | 32 | 10.47 | MMS, cm. App. 1 | 230.47 | 20 | 4.99 | MMS |


| 230.48 | 20 | 4.21 | MMS, worn smooth | 230.90 | 17 | 4.18 | MD2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 230.49 | 20 | 3.89 | MMS/N, head r., | 230.91 | 17 | 3.61 | MMS/S |
|  |  |  | prob. first century AD | 230.92 | 17 | 3.50 | NoEx |
| 230.50 | 20 | 3.28 | PA | 230.93 | 17 | 3.22 | MMS/S |
| 230.51 | 20 | frag'y | RT | 230.94 | 17 | 2.93 | ByzFort |
| 230.52 | 19 | 6.77 | MMS/S, cm. App. 1 | 230.95 | 17 | 2.86 | Wadi B |
| 230.53 | 19 | 4.90 | MMS/S, head r., prob. first century AD | 230.96 | 17 | 2.60 | MMS |
|  |  |  |  | 230.97 | 17 | 2.48 | MMS |
| 230.54 | 19 | 4.61 | ByzFort | 230.98 | 17 | 2.12 | Wadi B, female head r., |
| 230.55 | 19 | 4.50 | F55 |  |  |  | first century AD |
| 230.56 | 19 | 4.38 | ByzFort | 230.99 | 17 | 1.45 | Wadi B |
| 230.57 | 19 | 4.21 | MMS | 230.100 | 16 | 2.98 | MMS |
| 230.58 | 19 | 4.17 | MMS | 230.101 | 16 | 1.70 | MMS/S |
| 230.59 | 19 | 4.14 | Wadi B | 230.102 | 15 | 7.27 | ByzFort |
| 230.60 | 19 | 4.02 | F49, head r., | 230.103 | 15 | 3.75 | MMS/S |
|  |  |  | prob. first century AD | 230.104 | 15 | 3.70 | ByzFort |
| 230.61 | 19 | 3.50 | F49 | 230.105 | 15 | 2.95 | MMS |
| 230.62 | 19 | 3.43 | MMS | 230.106 | 15 | 2.60 | MMS/N |
| 230.63 | 19 | 3.40 | MMS | 230.107 | 15 | 2.42 | ByzFort |
| 230.64 | 19 | 3.18 | NoEx | 230.108 | 14 | 5.81 | ByzFort |
| 230.65 | 19 | 3.14 | MMS/S | 230.109 | 14 | 2.82 | ByzFort |
| 230.66 | 19 | 2.96 | MMS, halved, | 230.110 | 14 | 2.80 | ByzFort |
|  |  |  | prob. first century AD | 230.111 | 13 | 6.24 | NoEx |
| 230.67 | 19 | 2.36 | F49, first century AD | 230.112 | 13 | 5.18 | MMS/N |
|  |  |  | context | 230.113 | 13 | 4.50 | ByzFort |
| 230.68 | 19 | frag'y | AT-Pac | 230.114 | - | frag'y | ByzFort |
| 230.69 | 18 | 6.10 | NoEx | 230.115 | - | frag'y | MMS |
| 230.70 | 18 | 4.42 | NoEx | 230.116 | - | frag'y | MMS/N |
| 230.71 | 18 | 4.07 | NoEx | 230.117 | - | frag'y | MMS/N |
| 230.72 | 18 | 3.92 | ByzFort | 230.118 | - | frag'y | MMS/S |
| 230.73 | 18 | 3.90 | MMS |  |  |  |  |
| 230.74 | 18 | 3.87 | F55 |  |  |  |  |
| 230.75 | 18 | 3.82 | NoEx |  |  |  |  |
| 230.76 | 18 | 3.71 | ByzFort |  |  |  |  |
| 230.77 | 18 | 3.70 | NoEx |  |  |  |  |
| 230.78 | 18 | 3.61 | НоВ |  |  |  |  |
| 230.79 | 18 | 3.50 | MMS |  |  |  |  |
| 230.80 | 18 | 3.50 | MMS |  |  |  |  |
| 230.81 | 18 | 3.46 | ThSt, cm. App. 1 |  |  |  |  |
| 230.82 | 18 | 3.19 | MMS/S |  |  |  |  |
| 230.83 | 18 | 2.79 | NoEx |  |  |  |  |
| 230.84 | 18 | 2.56 | F49 |  |  |  |  |
| 230.85 | 18 | 2.35 | ByzFort |  |  |  |  |
| 230.86 | 17 | 5.42 | MMS/S |  |  |  |  |
| 230.87 | 17 | 4.92 | MMS/S |  |  |  |  |
| 230.88 | 17 | 4.86 | Tomb 07.1 |  |  |  |  |
| 230.89 | 17 | 4.81 | MD2 |  |  |  |  |

## Roman Imperial

## Hadrian

Rome
119-122 AD
Bust. r. laur. no drape IMPCAESARTRAIANHADRIANVSAVG
Concordia seated l. with patera PMTRPCOSIII
RIC II, p. 350, no. 82

| 231.1 | 17 | 2.64 | Tomb 07.1 |
| :--- | :--- | :--- | :--- |

Faustina Minor
Rome
161-180 AD AR denarius
Bust r. dr. FAVSTINA-AVGVSTA
Diana standing holding torch DIANA-LUCIF
RIC III, p. 268, no. 674
$232.18 \quad-\quad$ MMS/N

## Lucius Verus

Rome
165-166 AD AR denarius
Head r. laur. no drape LVERVSAVGARM-PARTHMAX
Pax standing l. with cornucopiae and olive branch
PAX-AVGTRPVICOSII
RIC III, p. 258, no. 555; M7 R 15
$233.1 \begin{array}{rrr}20 & 2.90 & \mathrm{MMS} / \mathrm{N} \\ & \\ & \text { Commodus } & \end{array}$

## Rome

191/2 AD AR denarius
Head r. laur. LAELAVRELCO-MMAVGPFEL
Mars leaning on shield and holding spear
MARTI-VLTORIAVG
RIC III, p. 396, no. 257

| 234.1 | 18 | 1.37 | NoEx |
| :---: | ---: | ---: | ---: |
|  |  |  |  |
|  | Caracalla |  |  |
|  |  |  |  |

Rome
211-217 AD Bi. antoninianus
Bust r. rad. ANTONINVSPIVSAVGGERM
Venus standing with scepter and Victoriola, leaning on shield VENVSVICTRIX
RIC IV.1, p. 259, no. 311d
$235.1 \quad 23 \quad 4.98$ HoB
Banker's marks (lines of dots) on obv. and rev.

## Severus Alexander

Rome
231-235 AD
AR denarius
Bust r. laur. IMPALEXANDERPIVSAVG
Jupiter with fulmen and eagle IOVIPRO-PVGNATORI
RIC IV.2, p. 88, no. 238
$\begin{array}{llll}\mathbf{2 3 6 . 1} & 20 & 2.63 & \text { MMS }\end{array}$

232 AD
As above
Sol standing with raised hand and globe PMTRPX-I-COSIIIPP
RIC IV.2, p. 79, no. 112
$237.1 \quad 20 \quad 2.55 \quad$ MMS/S

Philip I

## Rome

244-247 AD
Bi. antoninianus
Bust r. rad. IMPMIVLPHILIPPVSAVG
Annona with cornucopiae, prow behind ANNONAAVGG
RIC IV.3, p. 72, no. 29
$238.1 \quad 24 \quad 4.26 \quad$ MMS/S

Otacilia Severa

## Rome

244-246 AD Bi. antoninianus
Bust r. diademed, on crescent MARCIAOTACILSEVERAAVG
Pietas raises r. hand and holds incense box, child to l.
PIETASAVG
RIC IV.3, p. 83, no. 122b
$\begin{array}{llll}239.1 & 21 & 2.86 & \text { MD2 }\end{array}$

Valerian I
Rome
254 AD
Bust r. laur. IMPCPLICVALERIANVSAVG
Jupiter holding fulmen and scepter IOVI CONS-ERVATORISC RIC V.1, p. 53, no. 194
$\begin{array}{llll}240.1 & 21 & 6.13 & \text { MMS }\end{array}$

## Gallienus

Rome
260-268 AD
antoninianus
Head r. rad. IMPGALLIENVSAVG
Pax holding transverse scepter and olive branch
PAXAE-TERNAAVG $\underline{\mathrm{N} \mid}$
RIC V.1, p. 153, no. 252
$241.1 \quad 19 \quad 2.70$ NoEx

253-260 AD
Head r. rad. GALLIENVSAVG
Providentia with globe and transverse scepter
PROVIDAVG, no M/m
Besly and Bland 1983: 1017

| 242.1 | 19 | 2.49 | MMS/N |  |
| :---: | :---: | :---: | :---: | :---: |
| 260-268 AD |  |  |  |  |
| Bust r. rad. GALLIENVSAVG |  |  |  |  |
| Abundantia standing r. pouring out cornucopiae |  |  |  |  |
| ABVNDANTIAAVG B\|pellet (or die break?) |  |  |  |  |
| RIC V.1, p. 144, no. 157, poss. var., M7 R 33 |  |  |  |  |
| 243.1 | 18 | 1.60 | NoEx |  |
| Head r. rad. GALLIENVSAVG |  |  |  |  |
| Aequitas standing holding scales and cornucopiae |  |  |  |  |
| AEQVITASAVG |  |  |  |  |
| RIC V.1, p. 144, no. 159; M7 R 34 |  |  |  |  |
| 244.1 | 19 | 2.12 | MMS/N |  |
| In r. field $\Theta$, not noted in RIC (poss. Antioch?) |  |  |  |  |
| 244.2 | 20 | 1.82 | MD2 | No M/m |
| 244.3 | 22 | 2.47 | NoEx | If $M / \mathrm{m}$, |

As above
Centaur standing l. holding globe and rudder
APOLLINICONSAVG, in ex. N
RIC V.1, p. 145, no. 164 (sic), M7 R 37
$\begin{array}{llll}245.1 & 19 & 2.71 & \text { MMS, H1 }\end{array}$

As above
Emperor standing with spear and patera, to r. kneeling suppliant CONSERVATPIETAT, in ex. XII
RIC V.1, p. 145, no. 171a; M7 R 39
246.1
As above
Doe standing l. with head turned back
DIANAECONSAVG, symbol in ex. unc.

| RIC V.1, p. 145, no. 176 |
| :--- |
| 247.1 |$\quad 18$

As above
Antelope l. DIANAECONSAVG, in ex. $\Gamma$
RIC V.1, p. 146, no. 180; M7 R 41
$\begin{array}{llll}248.1 & 22 & 2.26 & \text { MMS }\end{array}$

As above
Jupiter standing, fulmen in r. hand IOVI PROPVGNAT XI|
RIC V.1, p. 149, no. 214 (sic)
$249.1 \quad 20 \quad 2.11 \quad$ MMS/S
$249.2 \quad 19$ broken $\quad$ MMS/S

As above
Hippocamp r. NEPTVNOCONSAVG, in ex. N
RIC V.1, p. 152, no. 245; M7 R 48
$\begin{array}{llll}250.1 & 21 & 3.67 & \text { MMS, H1 }\end{array}$

As above
Providentia standing holding baton and cornucopiae, at foot, globe PROVIAVG $\downarrow \mathrm{N}$
RIC V.1, p. 154, no. 267
$\begin{array}{llll}251.1 & 19 & 2.27 & \text { HoB }\end{array}$

As above
Securitas seated holding scepter SECVRITORBIS, in ex. VI
RIC V.1, p. 155, no. 278
$\begin{array}{llll}252.1 & 23 & 3.27 & \text { MMS, H1 }\end{array}$

As above
Standing female with purse and cornucopiae
VBERITASAVG $\mid \in$
Besly and Bland 1983: 1200; M7 R 53
$253.1 \quad 19 \quad 1.66 \quad$ MMS, H1

Bust r. rad. cuir. IMPGALLIENVSAVG
Victory standing with wreath and palm VICTORIAAVG
RIC V.1, p. 157, no. 298
$254.1 \quad 19 \quad 2.50$ NoEx

Bust r. rad. dr. GALLIENVSAVG
Soldier standing with shield and spear VIRTVSAVG |VI
RIC V.1, p. 159, no. 325
$255.1 \quad 22 \quad 4.15$ NoEx

As above
Standing female holding scales (Aequitas?)AVG
$256.1 \quad 22 \quad 3.19 \quad$ MMS/N

253-268 AD
Bust r. rad.?, illeg. legend
Figure standing l., raising r. hand, transverse scepter in l. Pax Aeterna Aug?
$257.1 \quad 19 \quad 1.80 \quad$ ByzFort


Bust r. rad. cuir. IMPCLAVDIVSAVG
Felicitas holding caduceus and cornucopiae
FELICITASAVG |B
RIC V.1, p. 214, no. 33 (sic)
$\begin{array}{llll}272.1 & 18 & 2.82 & \text { CW32 }\end{array}$

Bust r. rad. cuir. IMPCCLAVDIVSAVG
Fides holding two standards FIDESEXERCI, no M/m
RIC V.1, p. 214, no. 34

| 273.1 | 20 | 2.95 | CW32 |
| :--- | :--- | :--- | :--- |
| 273.2 | 19 | 3.00 | F49 |

Bust r. rad. cuir. IMPCLAVDIVSAVG
Fortuna holding cornucopiae and rudder FORTVNARED RIC V.1, p. 214, no. 40
$274.1 \quad 19 \quad 3.35$ NoEx

Bust r. rad. cuir. IMP(C)CLAVDIVSAVG
Jupiter with fulmen and scepter IOVIVICTORI $\underset{\sim}{\mid N}$
RIC V.1, p. 215, no. 54 or 55
$\begin{array}{llll}275.1 & 17 & 2.31 & M M S / N\end{array}$

Bust r. rad. cuir. IMP(C)CLAVDIVSAVG
Libertas standing holding pileus and scepter LIBERTAVG
RIC V.1, p. 216, nos. 62-63 (sic); M7 R 80

| 276.1 | 13 | 0.75 | $\mathrm{MMS} / \mathrm{S}$, clipped |
| :--- | :--- | :--- | :--- |
| 276.2 | 17 | 1.90 | $\mathrm{MMS} / \mathrm{S}$ |

Bust r. rad. cuir. IMPCCLAVDIVSAVG
Jupiter standing holding scepter and fulmen IOVISTATORI
RIC V.1, p. 215, no. 52
$\begin{array}{llll}277.1 & 18 & 2.17 & \text { NoEx }\end{array}$

Bust r. rad. cuir. IMPCLAVDIVSAVG
Pax with olive branch and transverse scepter
PAX AVGVSTI
RIC V.1, p. 217, no. 81 var. (no M/m)
$\begin{array}{llll}278.1 & 19 & 2.80 & \text { RT }\end{array}$

As above
Securitas leaning on small column with scepter
SECVRITAVG |XI
RIC V.1, p. 218, no. 100

| 279.1 | $22 \times 16$ | 2.22 | NoEx |
| :--- | :--- | :--- | :--- |
| 279.2 | 21 | 3.40 | MMS/N |

Bust r. rad. cuir. [IMPC?]CLAVDIVSAVG
Fortuna with cornucopiae and rudder, illeg. legend
$280.1 \quad 19 \quad 2.20 \quad$ MMS/N

Siscia
268-270 AD
Bust r. rad. cuir. IMPCLAVDIVSAVG
Laetitia standing holding wreath and cornucopiae
LAETITAAVG
RIC V.1, p. 226, no. 181; M7 R 85
$\begin{array}{llll}281.1 & 18 & 2.06 & M M S / N\end{array}$

Cyzicus
268-270 AD
Bust r. rad. cuir. IMPCLAVDIVSPFAVG
Trophy between two seated captives VICTORIAEGOTHIC, no M/m
RIC V.1, p. 233, no. 252 var.; M7 R 89
$282.1 \quad 18 \quad 3.14 \quad$ ByzFort
282.2 22 3.31 $\quad$ MMS/N

268-270 AD
Bust r. rad. cuir., legend illeg.
Illeg., in ex. SPQR
$283.1 \quad 25 \quad 2.47 \quad$ MMS

Smyrna
268 AD
Bust r. rad. IMPCMAVRCLAVDIVSAVG
Wolf and twins r. PMTRPOPP in ex. SPQR
Gysen 1999, p. 38; Klose 1987, not
284.1 $21 \quad$ 4.07 $\quad$ MMS/S

Uncertain Mint, probably Rome
268-270 AD
Bust r. rad. IMPCLAVDIVSAVG
Standing female with cornucopiae [...]AVG (Aequitas?)
Prob. RIC V.1, p. 212, no. 14; M7 R 74
$285.1 \quad 15 \quad 1.40 \quad$ MMS/N

## Uncertain Mint

268-270 AD
Bust r. rad. [...]CLAVDIVS
Felicitas with long caduceus and cornucopiae
FELICITTEMP
$286.1 \quad 20 \quad 3.44 \quad$ F49
Not in RIC, but similar found in Minster Hoard (Bland

| 1988), although with IMPCLAVDIVSAVG. There is no AVG or IMP after the name, though there is room for it. |  |  |  | Cyzicus |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 270 AD and later |  |  |  |
|  |  |  |  | As above |  |  |  |
| 253-270 AD |  |  |  | Funeral pyre CONSECRATIO |  |  |  |
| Bust r. rad. illeg. legend |  |  |  | RIC V.1, p. 234, no. 267 |  |  |  |
| Goddess with transverse scepter, illeg. legend |  |  |  | 293.1 | 22 | 3.17 | NoEx |
| 287.1 | 17 | 1.57 | MMS |  |  |  |  |
|  |  |  |  | All Mints |  |  |  |
| Bust r. rad. IMPCLAVDIVSAVG |  |  |  | As above |  |  |  |
| Goddess with patera and scepter [...]G |  |  |  | Eagle CONSECRATIO |  |  |  |
| 288.1 | 6 | frag'y | ByzFort | RIC V.1, p. 234, no. 266; M7 R 94 |  |  |  |
|  |  |  |  | 294.1 | 22 | 2.60 | MMS |
| Bust r. rad, illeg. legend |  |  |  | 294.2 | 18 | 2.01 | Tomb 07.1 |
| Standing female figure, illeg. legend |  |  |  | 294.3 | 17 | 2.46 | НоВ |
| 289.1 | 15 | 0.87 | NoEx | 294.4 | 17 | 2.02 | Tomb 07.1 |
| 289.2 | 15 | 1.04 | HoB | 294.5 | 16 | 1.19 | НоВ |
| 289.3 | 18 | 2.40 | MMS | 294.6 | 15 | 2.90 | MMS/S |
|  |  |  |  | 294.7 | 15 | 1.95 | MMS/S, H2 |
| Bust. r. rad. IMPCLAVDIVSAVG |  |  |  | 294.8 | 15 | 1.40 | MMS/S |
| Female standing l. with scepter in l. and branch? in r. |  |  |  | 294.9 | 15 | 1.40 | NoEx |
| [...]AVG |  |  |  | 294.10 | 15 | 1.19 | MMS, H1 |
| 290.1 | 16 | 1.61 | MMS, clipped? | 294.11 | 14 | 1.93 | AT, clipped |
| 290.2 | 16 | 1.28 | HoB | 294.12 | 13 | 0.95 | NoEx, clipped |
| Bust r. rad. [IMP]CLAVD[IVSAVG] |  |  |  | Uncertain Mint |  |  |  |
| No type? |  |  |  | As above |  |  |  |
| 291.1 |  | frag'y | MMS | Uncertain rev., Fortuna Redux? |  |  |  |
|  |  |  |  | 295.1 | 14 | 1.11 | F49 |
| Posthumous Claudius II Gothicus |  |  |  |  |  |  |  |
| Mediolanum or Rome |  |  |  | Uncertain Mints: Barbarous Radiates |  |  |  |
| 270 AD and later antoninianus |  |  |  | Bust r. rad., nonsense legend |  |  |  |
| Bust r. rad. DIVOCLAVDIO |  |  |  | Aequitas holding scales and cornucopiae, nonsense legend |  |  |  |
| Flaming altar CONSECRATIO |  |  |  | 296.1 | 13 | 1.46 | MMS |
| RIC V.1, p. 233, nos. 259-262; M7 R 93 |  |  |  |  |  |  |  |
| 292.1 | 21 | 2.88 | MMS | Bust r. | CL | O or v | sion of |
| 292.2 | 18 | 1.45 | Wadi B | Flamin | NS | TIO or | version of |
| 292.3 | 17 | 2.09 | NoEx | 297.1 | 17 | 1.48 | ByzFort |
| 292.4 | 16 | 0.92 | MMS/S | 297.2 | 14 | 1.66 | MMS |
| 292.5 | 16 | 1.84 | NoEx | 297.3 | 14 | 1.39 | MD2 |
| 292.6 | 15 | 1.80 | RT | 297.4 | 14 | 0.87 | НоВ |
| 292.7 | 15 | 1.66 | F49, H8 | 297.5 | 13 | 1.10 | MMS/N |
| 292.8 | 15 | 1.29 | MMS/S, clipped | 297.6 | 12 | 1.10 | F49, H8 |
| 292.9 | 17 | 2.41 | MMS | 297.7 | 12 | 0.74 | NoEx |
| 292.10 | 17 | 2.26 | MMS/N | 297.8 | 12 | 0.70 | MMS/N |
| 292.11 | 16 | 1.53 | MMS/N | 297.9 | 11 | 0.44 | MMS/N |
| 292.12 | 15 | 1.65 | MMS/N | 297.10 | 11 | 0.43 | F49 |
| 292.13 | 15 | 1.40 | MMS/S | 297.11 | - | frag'y | Tomb 07.1 |

Bust r. rad. DIVO CLAVDIO, or version of
Eagle standing, head turned back CONSECRATIO or
version of
$\begin{aligned} & 298.1\end{aligned}$
As above
Eagle with outspread wings, CONSECRATIO or version of $299.1 \quad 16 \quad 1.33 \quad \mathrm{HoB}$, no legend on rev.

Bust r. rad.
Standing goddess holding scepter?, no legend or nonsense legend, crude style

| 300.1 | 15 | 1.30 | MMS/N |
| :--- | :--- | :--- | :--- |
| 300.2 | 15 | 1.02 | HoB |
| 300.3 | 13 | 0.66 | F49 |
| 300.4 | 13 | 0.63 | HoB |

Bust r. rad.
Standing figure with cornucopiae?
$301.1 \quad 13 \quad 0.90 \quad$ ByzFort

Bust r. rad., nonsense legend
Figure standing facing in military dress, holding scepter in r. and unc. in l. $\perp^{*}$, no legend
$302.1 \quad 12 \quad 0.50 \quad$ F55

Bust. r. rad. illeg. or nonsense legend
Figure moving l. IIII

| 303.1 | 15 | 0.80 | $\mathrm{MMS} / \mathrm{N}$ |
| :--- | :--- | :--- | :--- |
| 303.2 | 14 | 1.00 | ThSt |

## Victorinus

| Cologne |  |  |  |
| :---: | :---: | :---: | :---: |
| 269 AD |  |  |  |
| Bust r. rad. dr. IMPCVICTORINVSPFAVG |  |  |  |
| Pax holding olive branch and transverse scepte RIC V.2, p. 397, no. 118 var. |  |  |  |
|  |  |  |  |
| $\begin{array}{lll} 304.1 & 22 & 3.20 \end{array}$ |  |  |  |
| Quintillus |  |  |  |
| Rome |  |  |  |
| 270 AD |  |  |  |
| Bust r. rad. IMPCMAVRCLQVINTILLVSAV |  |  |  |
| Aeternitas rad. raises r. hand and holds glob |  |  |  |
|  |  |  |  |
| RIC V.1, p. 240, no. 7 |  |  |  |
| 305.1 | 20 | 2.80 | NoEx |

270 AD
As above
Fortuna holding cornucopiae and rudder FORTVNAREDVX $\underline{\square}$
RIC V.1, p. 241, no. 20
$306.1 \quad 21 \quad 1.84 \quad$ NoEx

## Tetricus I

Trier
271-274 AD
antoninianus
Bust r. rad. IMPCTETRICVSAV(G)
Aequitas holding scales and cornucopiae AEQVITA己 AVG
RIC V.2, p. 406, no. 52
$307.1 \quad 16 \quad 1.41$ NoEx

Bust r. rad. IMPTETRICVSPFAVG
Pax standing sacrificing at altar, nothing in l. hand PAXAG
RIC V.2, p. 409, no. 109 var.
$308.1 \quad 15 \quad 0.89$ NoEx
Pax without perfume box; rev. legend

Bust r. rad IMP[...]
Laetitia? Holding wreath? and scepter/baton [...]ITE(?)
309.1 $14 \quad 1.54 \quad$ Wadi B

## Tetricus II

Trier
273-274 AD antoninianus
Bust r. rad. CPE(S)TETRICVSCAES
Spes holding up r. hand and holding dress with 1 . SPESPVBLICA
RIC V.2, p. 424, no. 272
$\begin{array}{llll}310.1 & 18 & 2.65 & \text { NoEx }\end{array}$

## Aurelian

Rome
273-274 AD denarius
Bust r. laur. IMP[C]AVRELIANVSAVG
Victory l. with wreath and palm, captive by feet
VICTORIAAVG, in ex. A
RIC V.1, p. 273, nos. 72-73
$311.1 \quad 18 \quad 2.10 \quad$ ByzFort
Note redating of Greenewalt et al. 1990, p. 155 n. 32

275 AD
antoninianus
Bust r. rad. IMPCLDOMAVRELIANVSAVG
Fortuna holding rudder and cornucopiae FORTVNAREDVX
RIC V.1, p. 269, no. 29
$312.1 \quad 17 \quad 2.40 \quad$ NoEx
Cyzicus
270-275 AD
Bust r. rad. IMPAVRELIANVSAVG
Genius holding patera and cornucopiae,
GENIVS EXERCITI
RIC V.1, p. 304, no. 345

| 313.1 | 20 | 3.23 | PA |
| :--- | :---: | :---: | :---: |
| 313.2 | 19 | 3.65 | RT |$l$

## Uncertain Mint

270-275 AD
Bust r. rad. IMPCDOMAVRELIANVSAVG
Obscure
$314.1 \quad 18 \quad 3.19 \quad \mathrm{MMS} / \mathrm{S}$

## antoninianus Antioch

282-283 AD
antoninianus
Bust r. rad. IMPCMAVRCARINVSNOBC
Jupiter handing Victoriola to emperor
VIRTVSAVGGG, between $\Delta$, in ex. XXI
RIC V.2, p. 164, no. 208 var.
$319.1 \quad 23 \quad 3.87$ NoEx
RIC does not list this off. for Antioch, but similar found in trade.

## Uncertain Mint

283-285 AD
Bust r. rad. dr. MCARINVSAVG
Aequitas standing with cornucopiae and scales AEQVITASAVG VI|VI, nothing in ex.
Ticinum
270-275 AD
antoninianus
Bust r. diadem, on crescent SEVERINAAVG
RIC not

| 320.1 | 22 | 2.79 | НоВ |
| :--- | :--- | :--- | :--- |

Concordia holding two ensigns CONCORDIAEMILITVM
RIC V.1, p. 316, no. 8

| 315.1 | 22 | 4.00 | MMS/N, in ex. QXXT |
| :--- | :--- | :--- | :--- |
| 315.2 | 24 | 3.10 | MMS, H1, in ex. SXXT |

## Tacitus

Rome
275-276 AD antoninianus

Bust r. rad. IMPCMCLTACITVSAVG
Laetitia holding wreath and rudder LAETITIAEFVND, ex. miss.
RIC V.1, p. 335, no. 89



Cyzicus
295-299 AD
Bust r. rad. IMPCCDIOCLETIANVSPFAVG
Jupiter handing emperor Victoriola, M/m between CONCORDIA MILITVM
RIC VI, p. 581, no. 16a; M7 R 109

| 328.1 | КА | 21 | 2.77 | HoB |
| :--- | :--- | :--- | :--- | :--- |
| 328.2 | КГ | 21 | 2.64 | NoEx |
| 328.3 | КГ | 22 | 2.80 | MMS/N |

Uncertain Mint
Bust r. rad. [...]IO[...]
Illeg. rev.
$329.1 \quad 18 \quad 3.50 \quad$ ByzFort
Maximian Herculius
Heraclea
295-298 AD
Bust r. rad. cuir. IMPCMAVALMAXIMIAN
Jupiter handing Victoriola to emperor, M/m
CONCORDIA MILITVM
RIC VI, p. 531, nos. 14, 22; M7 R 113

| 330.1 | H $\Delta$ | 21 | 2.71 | AT-Pac |
| :--- | :--- | :--- | :--- | :--- |
| 330.2 | H€ | 22 | 3.47 | HoB |

Cyzicus
295-299 AD
Bust r. rad. cuir. (dr.) IMPCMAMAXIMIANVSPFAVG
Jupiter handing Victory to emperor, M/m between
CONCORDIA MILITVM
RIC VI, p. 581, nos. 15b, 16b; M7 R 115, 116

Uncertain Mint
291-310 AD
Bust r. rad. IMPCMAMAXIMIANVSPFAVG
Illeg.
$332.1 \quad 19 \quad 1.61 \quad$ MMS
Pierced for suspension, so emperor's head is upright

295-299 AD
Bust r. rad. IMPCM[...]ANVSPFAVG
Jupiter handing Victoriola to emperor
CONCORDIA MILITVM, all M/m missing
$\begin{array}{llll}333.1 & 19 & 1.91 & \text { MMS }\end{array}$

## Galerius Maximian

Thessalonica
302-303 AD
follis
Bust r. laur. GALVALMAXIMIANVSNOBCAES
fraction? Genius with cornucopiae and patera
GENIO POPVLI ROMANI, in r. field $\Gamma$, in ex. • TS •
RIC VI, p. 513, no. 26
$334.1 \quad 28 \quad 9.38 \quad \mathrm{MMS} / \mathrm{N}$

Heraclea
293-305 AD
fraction
fraction
Bust r. rad. GALVALMAXIMIANVSNOBCAES
Jupiter hands Victoriola to emperor, M/m between
CONCORDIA MILITVM
RIC VI, p. 531, no. 16; M7 R 121
335.1 HA $21 \quad 2.32 \quad \mathrm{MMS} / \mathrm{N}$
335.2 НГ 22 3.64 NoEx

305-307 AD
follis
Bust r. laur. IMPCGALVALMAXIMIANVSPFAVG
Genius with patera and cornucopiae
GENIO POPVLI ROMANI, in ex. HTB
RIC VI, p. 533, no. 24b or 30
$336.1 \quad 27 \quad 6.78 \quad$ MMS, pierced for suspension


| 318-320 AD follis |  |  |  | Cyzicus |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bust r. laur. dr. with globe, scepter, mappa |  |  |  | 313-315 AD |  |  |  |  | follis |
| IMPLICINIVSAVG |  |  |  | Brockage |  |  |  |  |  |
| Camp-gate, three towers PROVIDENTIAE AVGG $\mid \Lambda$, in ex. SMHГ |  |  |  | Jupiter standing with Victoriola and scepter IOVI |  |  |  |  |  |
|  |  |  |  | CONS | RVATOR | I to 1 | le | ex. SMK |  |
| RIC VII, p. 547, no. 49 (sic) |  |  |  | RIC VII, p. 643, nos. 3-4; M7 R 146 |  |  |  |  |  |
| 348.1 | 20 | 2.40 | MMS | 352.1 |  | 20 | 2.91 | Church EA |  |
| RIC VII wrongly describes as bust 1 . |  |  |  |  |  |  |  |  |  |
|  |  |  |  | 321-3 | AD |  |  |  | follis |
| 321-324 AD follis |  |  |  | Bust r. rad. IMPCVALLICINLICINIVSPFAVG |  |  |  |  |  |
| Bust r. rad. cuir. IMPCVALLICINLICINIVSPFAVG |  |  |  | Jupiter standing, eagle and one captive |  |  |  |  |  |
| Jupiter standing with Victoriola and scepter to l. eagle, to r. captive IOVI CONSERVATORI in r. field X/IIГ, in ex., M/m |  |  |  | IOVI CONSERVATORI in r. field X/III, |  |  |  |  |  |
| RIC VII, p. 548, no. 52; M7 R 141 |  |  |  | RIC VII, p. 645, no. 15; M7 R 147 |  |  |  |  |  |
| 349.1 | SMHA 20 | 3.54 | MMS/N | 353.1 | A | 29 | 3.05 | MMS/N |  |
| 349.2 | SMHB 20 | 3.30 | NoEx | 353.2 | A | 20 | 2.30 | PA |  |
| 349.3 | unc. 19 | 3.03 | MMS/N | 353.3 | A | 19 | 3.09 | MD1/S |  |
|  |  |  |  | 353.4 | A | 19 | 2.00 | MMS/N |  |
| Nicomedia |  |  |  | 353.5 | B | 20 | 2.47 | MMS/N |  |
| 313-317 AD follis |  |  |  | 353.6 | B | 19 | 3.65 | ThSt |  |
| Bust r. laur. IMPCVALLICINLICINIVSPFAVG |  |  |  | 353.7 | $\Delta$ | 20 | 1.31 | NoEx |  |
| Jupiter standing with Victoriola and scepter, to l. eagle |  |  |  | 353.8 | A or $\Delta$ | 20 | 2.67 | MMS/S |  |
| IOVI CONSERVATORI, in r. field off. letter, in ex. SMN |  |  |  |  |  |  |  |  |  |
| RIC VII, p. 601, no. 13; M7 R 142 |  |  |  | Antioch |  |  |  |  |  |
| 350.1 | A 20 | 2.42 | F55 | 317-320 AD |  |  |  |  | follis |
| 350.2 | Г 21 | 2.31 | MMS | Bust l. laur. IMPLICINIVSAVG |  |  |  |  |  |
| 350.3 | $€ \quad 20$ | 3.95 | MMS/N | Jupiter standing, to l. captive IOVI CONSERVATORI $\rfloor$ S , in ex. SMANT |  |  |  |  |  |
| 321-324 AD follis |  |  |  | RIC VII, p. 680, no. 27 |  |  |  |  |  |
| As above |  |  |  | 354.1 |  | 19 | 2.63 | NoEx |  |
| Jupiter standing with Victoriola and scepter, to l. eagle, to |  |  |  |  |  |  |  |  |  |
| r. captive, IOVI CONSERVATORI, in r. field X/IIT, in ex. |  |  |  |  |  | Uncertain Mint |  |  |  |  |  |
| SMN with officina letter |  |  |  | 308-324 AD |  |  |  |  | follis |
| RIC VII, p. 607, no. 44; M7 R 145 |  |  |  | Bust r. laur. IMPCVALLICINLICINIVSPFAVG |  |  |  |  |  |
| 351.1 | A 19 | 2.00 | MMS/N | Sol standing SOLI INVICTO COMITI |  |  |  |  |  |
| 351.2 | A 20 | 3.50 | MMS/S | 355.1 | 25 |  | 2.90 | MMS |  |
| 351.3 | $\mathrm{A}^{\prime} \quad 17$ | 2.98 | NoEx |  |  |  |  |  |  |
| 351.4 | B 23 | 3.25 | MMS/N | Bust r. laur. DNLICINIVSPFAVG |  |  |  |  |  |
| 351.5 | B 19 | 2.80 | ThSt | Jupiter standing with Victoriola, to l. eagle IOVI |  |  |  |  |  |
| 351.6 | $\Gamma \quad 20$ | 2.90 | MMS | CONSERVATORI |  |  |  |  |  |
| 351.7 | $\Gamma \quad 20$ | 2.69 | MMS | 356.1 |  | 20 | 3.43 | NoEx |  |
| 351.8 | $\Delta \quad 19$ | 3.51 | Tomb 07.1 |  |  |  |  |  |  |

Bust r. laur. IMPCLICINIVSPFAVG
Jupiter standing with Victoriola, to l. eagle to r. captive
IOVI CONSERVATORI, in r. field X/IIГ
$357.1 \quad 20 \quad 1.59 \quad$ F55

Bust r. laur. cuir. IMPLICI-NIVSPFAVG Jupiter standing with fulmen
IOVI CONSERVATORI, in r. field obscure mark

| 358.1 | 17 | 2.20 | $M M S / S$ |
| :--- | :--- | :--- | :--- |

Bust l. laur. cuir. IMP[...]LICINIVS[...]
Camp-gate PROVIDENTIAE[....]
$359.1 \quad 19 \quad 2.08 \quad$ NoEx

Licinius II
Heraclea
321-324 AD fraction
Bust l. helm. cuir. spear, shield DNVALLICINIVSNOBC
Jupiter standing holding Victoriola and scepter, to l. eagle,
to $r$. captive IOVI CONSERVATORI, in r. field X/IIГ, in ex.
SMH and officina number
RIC VII, p. 548, no. 54

| 360.1 | A | 20 | 3.07 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 360.2 | A | 18 | 3.00 | MMS/N |
| 360.3 | B | 19 | 2.57 | MMS |

## Nicomedia

321-324 AD
As above
Jupiter standing with eagle and one captive
IOVI CONSERVATORI, in r. field X/III, in ex. SMNA
RIC VII, p. 608, no. 49; M7 R 154

| 361.1 | 28 | 2.21 | $\mathrm{MMS} / \mathrm{S}$ |
| :--- | :--- | :--- | :--- |
| 361.2 | 21 | 3.50 | $\mathrm{MMS} / \mathrm{N}$ |

Cyzicus
317-320 AD follis
Bust l. laur. with globe or scepter, mappa (large bust)
DNVALLICINLICINIVSNOBC
Jupiter standing with Victoriola IOVI CONSERVATORI
CAESS wreath|B, in ex. SMK
RIC VII, p. 644, no. 11; M7 R 157
$\begin{array}{llll}362.1 & 20 & 3.60 & \text { HoB }\end{array}$

## Antioch

321-323 AD
Bust r. helm., cuir., spear, shield
DNVALLICINLICINIVSNOBC
Jupiter standing, eagle and one captive
IOVI CONSERVATORI, in r. field X/IIГ, in ex. SMANTA
RIC VII, p. 682, no. 36
$363.1 \quad 21 \quad 2.61 \quad \mathrm{MMS} / \mathrm{S}$
follis

Constantine I

## Londinium

321 AD
follis
Bust r. laur. cuir. with eagle-tipped scepter CONSTANTINVSAVG
Altar with inscription VOT/IS/XX
BEATA TRA *** NQVILLITAS $\operatorname{P} \mid \mathrm{A}$, in ex. PLON
RIC VII, p. 110, no. 205
$\begin{array}{llll}364.1 & 19 & 3.20 & \text { HoB }\end{array}$

## Arelate

322-323 AD
Bust r. laur. CONSTANTINVSAVG
VOT/XX in wreath DN CONSTANTINI MAX AVG, in ex. $\mathrm{P}^{\star}$ AR
RIC VII, p. 261, no. 252
$\begin{array}{llll}365.1 & 20 & 3.20 & \text { MMS/S }\end{array}$

Ticinum
319-320 AD
Bust r. helm. CONSTANTINVSAVG
Standard inscribed VOT/XX between two captives
follis VIRTVS EXERCIT, in ex. PT
RIC VII, p. 376, no. 114
$\begin{array}{llll}366.1 & 20 & 2.70 & \text { MMS }\end{array}$

Trier
315-316 AD
Bust r. laur. CONSTANTINVSPFAVG
Sol standing with globe SOLI INVICTO COMITI B|S
RIC VII, p. 170, no. 76
$\begin{array}{llll}367.1 & 19 & 2.81 & \text { AT-Pac }\end{array}$

Rome
313-319 AD
Bust r. laur. IMPCONSTANTINVSPFAVG
Sol standing with globe SOLI INVICTO COMITI R|F,
in ex. $\mathrm{R}^{\star} \mathrm{P}$
RIC VII, p. 298, no. 18
$368.1 \quad 23 \quad 3.41 \quad$ MMS/N

313 AD
As above
Sol standing with globe SOLI INVICTO COMITI R|F,
in ex. $\mathrm{R}^{\star}$ S
RIC VII, p. 298, no. 19
$369.1 \quad 19 \quad 2.80 \quad$ NoEx


Cyzicus
317-320 AD follis
Bust l. laur. DNFLIVLCRISPVSNOBCAESS
Jupiter standing with Victoriola and scepter
IOVI CONSERVATORI CAESS wreath|A, in ex. SMK
RIC VII, p. 644, no. 10

| 382.1 | 17 | 3.23 | MMS/N |
| :---: | :---: | :---: | :---: |
| Uncertain Mint |  |  |  |
| 317-326 AD |  |  |  |
| Bust r. laur. CRISPVSNOBCAES |  |  |  |
| Emperor standing in military gear PRINCIPI IVVENNTVTIS |  |  |  |
|  |  |  |  |
| 383.1 | 18 | 3.30 | MMS/N |

## Lugdunит

320 AD
Bust r. laur. cuir., seen from back
CONSTANTINVSIVNNOBC (no breaks)
Two Victories facing each other holding shield inscribed
VOT/PR, over altar VICTORIAE LAETAE PRINC PERP,
in ex. P two bound captives L
RIC VII, p. 128, no. 90 var.
384.1 $20 \quad 1.90$ MMS

Variant in obverse legend; in RIC VII, p. 127 n. 77 the author suggests that the previous recording of the legend from Finland (Imajoki Collection) is in error, but now can be seen it is not.

Uncertain Emperor (Licinius or House of Constantine)
Cyzicus
308-330 AD
Bust l. laur. cuir., illeg. legend
Camp-gate PROVIDENTIAE.... in ex. SMKA
385.123 frag'y ByzFort

Uncertain Mint
308-330 AD
Bust r .

| Camp-gate |  |  |  |
| :--- | :--- | :--- | :--- |
| 386.1 | 18 | 2.30 | NoEx |

200-330 AD unc. antoninianus or follis

| 387.1 | 18 | 2.02 | NoEx |
| :--- | ---: | ---: | :--- |
| Bust r./IOVI CONSERVATORI |  |  |  |
| 387.2 | 20 | 4.01 | MMS/ |
| Bust r./IOVI CONSERVATORI |  |  |  |
| 387.3 | 20 | 4.40 | MMS/ |
| Illeg./IOVI CONSERVATORI |  |  |  |
| 387.4 | 23 | 4.56 | HoB |
| Bust r./IOVI CONSERVATORI |  |  |  |
| 387.5 | 15 | 1.68 | MMS |

Bust r./Jupiter standing with Victoriola
$387.6 \quad 20 \quad 2.40 \quad$ Wadi B

IMP[...] /[SOLI INVICTO COM]ITI

| 387.7 | 23 | 3.81 | EH |
| :--- | :--- | :--- | :--- |

$387.8 \quad 23 \quad 3.32 \quad$ MMS/N
$387.9 \quad 22 \quad 3.26 \quad$ HoB
$387.10 \quad 22$ frag'y MMS
$387.11 \quad 21 \quad 4.71 \quad$ MMS/N
$387.12 \quad 21 \quad 4.03 \quad$ MMS
$387.13 \quad 21 \quad 3.91 \quad$ MMS
$387.14 \quad 21 \quad 3.69$ NoEx
$387.15 \quad 21 \quad 3.31 \quad$ MMS/S
$387.16 \quad 20 \quad 3.65 \quad$ MMS/N
$387.17 \quad 20 \quad 2.45 \quad$ НоВ
$387.18 \quad 20$ frag'y MMS/N
$387.19 \quad 19 \quad 3.63 \quad$ F49
$387.20 \quad 19 \quad 3.63 \quad$ Church EA
$387.21 \quad 19 \quad 3.00 \quad$ MMS/S
$387.22 \quad 19 \quad 2.56 \quad$ MMS/N
$387.23 \quad 17$ frag'y $\quad$ MMS/N
$387.24 \quad-\quad$ frag'y F55

## Late Roman Coins (324-491)

Unless stated, coins are copper alloy and obverses show an emperor bust r. pearl-diademed, cuirassed, draped. The specific entries list the mintmark (when relevant), diameter, weight, and sector. For fuller description of reverse types, see Table of Reverse Descriptions, Appendix 3. For monogram types, see Table App. 1.1. Note that all officinae Es are rendered on coins as $€$.

## 324-348 AD, ALL FOLLES

Constantine I
Heraclea
336-337 AD
RIC VII, p. 561, no. 150
Bust laur. CONSTANTINVSMAXAVG
Gloria Exercitus 1 standard
388.1 SMHГ $\quad 15 \quad 1.64 \quad$ F49

325-326 AD
RIC VII, p. 550, no. 69
Head laur. CONSTANTINVSAVG
Vot XXX

| 389.1 | SMHA | 18 | 1.63 | F49, unc. obv. |
| :--- | :--- | :--- | :--- | :--- |
| 389.2 | SMHB | 18 | 1.88 | MMS/N |

## Constantinople

327-328 AD
RIC VII, p. 572, no. 16
Head laur. CONSTANTINVSMAXAVG
Gloria Exercitus emperor standing, in l. field off. letter, CONS「

| 390.1 | 19 | 1.48 | F55 |
| :--- | :--- | :--- | :--- |
| 390.2 | 16 | frag'y | MMS/S |
| 390.3 | 14 | 1.20 | NoEx |
| 390.4 | 14 | frag'y | MMS/N |

330-333 AD
RIC VII, p. 579, no. 59; M7 R 177
CONSTANTINVSMAXAVG
Gloria Exercitus 2 standards
391.1 CONSH $18 \quad 1.92 \quad$ MMS/S

333-335 AD
RIC VII, p. 581, no. 73; M7 R 178
As above
392.1 CONSH• $18 \quad 2.10 \quad$ MMS/N

330-335 AD
As above, but uncertain $\mathrm{M} / \mathrm{m}$

| 393.1 | CONS[..] | 18 | 1.48 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 393.2 | CONS[..] | 15 | 1.20 | MMS/S |

336-337 AD
RIC VII, p. 589, no. 137; M7 R 180
Bust rd. CONSTANTINVSMAXAVG
Gloria Exercitus 1 standard

| 394.1 | CONSA | 16 | 1.10 | MMS/S |
| :--- | :--- | :--- | :--- | :--- |
| 394.2 | CONS[.] | 16 | 1.36 | Tomb 07.1 |

Constantinople?
327-328 AD
RIC VII, pp. 572-73, nos. 18, 25
Bust r. pd., illeg. legend
Libertas Pvblica?

| 395.1 | - | 16 | 1.72 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 395.2 | - | 15 | 1.40 | NoEx |

Nicomedia
324-325 AD
RIC VII, p. 615, no. 90; M7 R 185
Head laur. CONSTANTINVSAVG
Providentiae Augg

| 396.1 | SMNA | 17 | 1.96 | MD2 |
| :--- | :--- | :--- | :--- | :--- |
| 396.2 | SMNA | 21 | 3.28 | F55 |


| 328-329 AD |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| RIC VII, p. 625, nos. 153, 155; M7 R 188 |  |  |  |  |
| Head pd. or rd. CONSTANTINVSAVG |  |  |  |  |
| Providentiae Augg |  |  |  |  |
| 397.1 | SMNA | - | - | NoEx |
| 397.2 | SMNA or $\triangle$ | 17 | 2.68 | NoEx |
| 330-335 AD |  |  |  |  |
| RIC VII, p. 633, no. 188; M7 R 189 |  |  |  |  |
| Bust rd. CONSTANTINVSMAXAVG |  |  |  |  |
| Gloria Exercitus 2 standards |  |  |  |  |
| 398.1 | SMNA | 19 | 2.54 | MMS/N |
| 398.2 | SMNA | 17 | 2.30 | MMS/N |
| 398.3 | SMNA | 17 | 2.38 | MMS/N |
| 398.4 | SMNA | 19 | 2.58 | NoEx |
| 398.5 | SMNB | 17 | 2.11 | NoEx |
| 398.6 | SMNए | 19 | 1.90 | NoEx |
| 398.7 | SMNE | 18 | 2.40 | MMS/N |
| 336-337 AD |  |  |  |  |
| RIC VII, p. 635, no. 199; M7 R 190 |  |  |  |  |
| As above |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 399.1 | SMNB | 16 | 1.44 | PA |
| 399.2 | SMNB | 16 | 1.35 | MMS |
| 399.3 | SMN[.] | 15 | 1.59 | MD1/S |
| 337-340 AD |  |  |  |  |
| RIC VIII, p. 471, no. 7 |  |  |  |  |
| Head laur. rd. DNCONSTANTINVSPFAVG |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 400.1 | SMNA | 18 | 2.30 | RT |
| Cyzicus |  |  |  |  |
| 324-325 AD |  |  |  |  |
| RIC VII, p. 647, no. 24 |  |  |  |  |
| Head laur. CONSTANTINVSAVG |  |  |  |  |
| Providentiae Augg |  |  |  |  |
| 401.1 | SMKA | 20 | 3.30 | MMS/N |
| 401.2 | SMKB | 20 | 2.94 | НоВ |
| 401.3 | SMK $\triangle$ | 21 | 2.70 | MMS/N |
| 401.4 | SMK $\Delta$ | 21 | 3.40 | NoEx |
| 329-330 AD |  |  |  |  |
| RIC VII, p. 652, no. 59; M7 R 193 |  |  |  |  |
| Bust laur. CONSTANTINVSMAXAVG |  |  |  |  |
| Providentiae Augg |  |  |  |  |
| 402.1 | SMK[.] | 18 | 3.30 | NoEx |
| 330-333 AD |  |  |  |  |
| RIC VII, p. 655, no. 77; M7 R 194 |  |  |  |  |
| As above |  |  |  |  |
| Gloria Exercitus 2 standards |  |  |  |  |
| 403.1 | SMK[.] | 17 | 2.18 | NoEx |


| 336-337 AD |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| RIC VII, p. 659, no. 122 |  |  |  |  |
| Bust laur. rd. CONSTANTINVSMAXAVG |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 404.1 | SMKA | 17 | 1.41 | AT |
| 404.2 | SMK[.] | 16 | 1.36 | MMS |
| Antioch |  |  |  |  |
| 325-326 AD |  |  |  |  |
| RIC VII, p. 688, no. 63 |  |  |  |  |
| Head laur. CONSTANTINVSAVG |  |  |  |  |
| Providentiae Augg |  |  |  |  |
| 405.1 | SMANT厂 | 19 | 3.70 | MMS/S |
| 335 AD |  |  |  |  |
| RIC VII, p. 693, no. 86; M7 R 199 |  |  |  |  |
| Bust rd. CONSTANTINVSMAXAVG |  |  |  |  |
| Gloria Exercitus 2 standards |  |  |  |  |
| 406.1 | SMANA | 18 | 2.30 | NoEx |
| 335-337 AD |  |  |  |  |
| RIC VII, p. 697, no. 108; M7 R 200 |  |  |  |  |
| As above |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 407.1 | SMANB | 14 | 1.79 | Tomb 07.1 |
| 407.2 | SMAN[.] | 15 | 1.65 | Wadi B |
| Alexandria |  |  |  |  |
| 337-340 AD |  |  |  |  |
| RIC VIII, p. 539, no. 13 |  |  |  |  |
| Bust laur. CONSTANTINVSMAXAVG |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 408.1 | SMALA | 15 | 1.87 | MMS/N |
| Uncertain Mint |  |  |  |  |
| 324-329 AD |  |  |  |  |
| Head laur. CONSTANTINVSAVG |  |  |  |  |
| Providentiae Augg |  |  |  |  |
| 409.1 |  | 18 | 2.41 | MMS/N |
| 330-335 AD |  |  |  |  |
| M7 R 205 |  |  |  |  |
| Bust rd. CONSTANTINVSMAXAVG |  |  |  |  |
| Gloria Exercitus 2 standards |  |  |  |  |
| 410.1 |  | 18 | 2.20 | NoEx |
| Constantine I, Posthumous |  |  |  |  |
| Constantinople |  |  |  |  |
| 337-340 AD |  |  |  |  |
| RIC VIII, p. 450, no. 39; M7 R 211 |  |  |  |  |
| Quadriga |  |  |  |  |
| 411.1 | CONS[.] | 16 | 1.11 | ByzFort |
| 411.2 | CONS[.] | 15 | 1.17 | MMS/S |


| 342 AD |  |  |  |  | Antioch or Alexandria |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| RIC VIII, p. 452, no. 62; M7 R 212 |  |  |  |  | 341-346 AD |  |  |  |  |
| Ivst Ven Mem |  |  |  |  | VN MR |  |  |  |  |
| 412.1 | CON[..] | 14 | 1.23 | MMS/S | 420.1 | SMA[...] | 17 | 1.74 | F55 |
| 347-348 AD |  |  |  |  | Uncertain Eastern Mint |  |  |  |  |
| RIC VIII, p. 453, no. 68; M7 R 213 |  |  |  |  | 337-340 AD |  |  |  |  |
| VN MR |  |  |  |  | M7 R 231 |  |  |  |  |
| 413.1 | CONS | 15 | 1.20 | HoB | Quadriga |  |  |  |  |
| 413.2 | CONS[.] | 19 | 1.60 | MMS | 421.1 |  | 17 | 1.13 | MMS |
|  |  |  |  |  | 421.2 |  | 15 | 1.97 | MMS |
| Nicomedia |  |  |  |  | 421.3 |  | 14 | 1.97 | MMS |
| 337-340 AD |  |  |  |  | 421.4 |  | 14 | 1.45 | MMS/N |
| RIC VIII, p. 472, no. 18; M7 R 214 |  |  |  |  | 421.5 |  | - | frag'y | MMS/N |
| Quadriga |  |  |  |  |  |  |  |  |  |
| 414.1 | SMNA | 16 | 1.30 | F49 | 337-347 AD |  |  |  |  |
| 414.2 | SMNA | 16 | 1.80 | MMS/N | M7 R 232 |  |  |  |  |
|  |  |  |  |  | Ivst Ven Mem |  |  |  |  |
| 347-348 AD |  |  |  |  | 422.1 |  | 19 | 2.40 | MMS/N |
| RIC VIII, p. 474, nos. 48, 57; M7 R 216, 218 |  |  |  |  | 422.2 |  | 13 | 0.85 | MMS/N |
| VN MR |  |  |  |  |  |  |  |  |  |
| 415.1 | SMNB | 15 | 2.03 | НоВ | 347-3 | AD |  |  |  |
| 415.2 | SMNE• | 15 | 1.28 | MMS/N | M7 R |  |  |  |  |
| 415.3 | SMN[.] | 15 | 1.30 | PN/E | VN MR |  |  |  |  |
| 415.4 | SMN[.] | 14 | 1.40 | MMS/S, H2 | 423.1 |  | 17 | 1.38 | HoB |
|  |  |  |  |  | 423.2 |  | 16 | 1.29 | Wadi B |
| Cyzicus |  |  |  |  | 423.3 |  | 15 | 1.67 | MMS/N |
| 337-340 AD |  |  |  |  | 423.4 |  | 15 | 1.54 | MMS/N |
| RIC VIII, p. 490, no. 4ff; M7 R 219-221 |  |  |  |  | 423.5 |  | 15 | 1.52 | HoB |
| Quadriga |  |  |  |  | 423.6 |  | 15 | 1.46 | NoEx |
| 416.1 | SMK[.] | 15 | 1.57 | NoEx | 423.7 |  | 15 | 1.32 | Wadi B |
|  |  |  |  |  | 423.8 |  | 15 | 0.95 | MMS |
| 342-347 AD |  |  |  |  | 423.9 |  | 15 | 0.95 | MMS/N |
| RIC VIII, p. 491, no. 35 |  |  |  |  | 423.10 |  | 14 | 1.66 | F55 |
| Ivst Ven Mem |  |  |  |  | 423.11 |  |  | $\begin{aligned} & 0.93 \\ & \text { frag'y } \end{aligned}$ | F49, clipped? <br> НоВ |
| 417.1 | SMKA | 16 | 1.62 | HoB | 423.12 |  | - |  |  |
| 347-348 AD |  |  |  |  | Helena |  |  |  |  |
| RIC VIII, p. 493, no. 46; M7 R 222 |  |  |  |  | Constantinople |  |  |  |  |
| VN MR |  |  |  |  | 330 AD |  |  |  |  |
| 418.1 | SMKA | 14 | 1.08 | MMS/N | RIC VIII, p. 449, no. 34, M7 R 236 |  |  |  |  |
| 418.2 | SMKB | 15 | 1.19 | NoEx | Pax Publica |  |  |  |  |
| 418.3 | SMKE | 15 | 1.57 | NoEx | 424.1 | CONS[E] | 15 | 1.39 | NoEx |
| 418.4 | SMKH | 14 | 1.57 | NoEx |  |  |  |  |  |
| 418.5 | SMK[.] | 16 | 1.21 | HoB | Alexan |  |  |  |  |
| 418.6 | SMK[.] | 15 | 1.81 | HoB, clipped | 325-326 ADRIC VII, p. 709 , no. 38 |  |  |  |  |
| 418.7 | SMK[.] | 14 | 1.31 | MMS/N |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Securitas Reipublice |  |  |  |  |
| Alexandria |  |  |  |  | 425.1 | MAL[.] | 19 | 2.98 | Syn |
| $347-348$ AD |  |  |  |  |  |  |  |  |  |
| RIC VIII, p. 541, no. 41 |  |  |  |  | Uncertain Mint |  |  |  |  |
| VN MR |  |  |  |  | 324-330 AD |  |  |  |  |
| 419.1 | SMAL「* | 15 | 1.10 | НоВ | Standing goddess |  |  |  |  |
|  |  |  |  |  | 426.1 |  | 11 | 0.97 | F49, clipped, H8 |





347-348 AD
RIC VIII, p. 453, no. 69; M7 R 335-336
As above
Vot Mult

| 475.1 | CONS[.] | 18 | 1.80 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 475.2 | CONS[.] | 17 | 1.15 | Wadi B |
| 475.3 | CONS[.] | 16 | 1.81 | HoB |
| 475.4 | CONS[.] | 15 | 1.68 | HoB |
| 475.5 | CONS[.] | 15 | 1.26 | HoB |

## Nicomedia

330-335 AD
RIC VII, p. 633, no. 191; M7 R 304
Bust laur. FLIVLCONSTANTIVSNOBC
Gloria Exercitus 2 standards

| 476.1 | SMN[.] | 19 | 1.93 | F49 |
| :---: | :---: | :---: | :---: | :---: |
| 336-337 AD |  |  |  |  |
| RIC VII, p. 635, no. 201 |  |  |  |  |
| As above |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 477.1 | SMNA | 16 | 1.75 | MMS/N |
| 337-340 AD |  |  |  |  |
| RIC VIII, p. 471, nos. 10-11; M7 R 355 |  |  |  |  |
| Head rd. or laur. rd. DNCONSTANTIVSPFAVG |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 478.1 | SMNT | 15 | 0.98 | PA |
| 478.2 | SMNT | 14 | 1.48 | MMS |
| 478.3 | SMN $\triangle$ | 17 | 1.10 | MMS/N |

347-348 AD
RIC VIII, p. 474, nos. 49-50; M7 R 356, 358
Head pd. or rd. DNCONSTANTIVSPFAVG
Vot Mult

| 479.1 | SMNA | 14 | 1.44 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 479.2 | SMNA | 13 | 1.32 | HoB, clipped |
| 479.3 | SMN[..] | 15 | 1.35 | MMS/N |

Cyzicus
330-335 AD
RIC VII, p. 654, nos. 69, 84, 113; M7 R 306
Bust laur. FLIVLCONSTANTIVSNOBC
Gloria Exercitus 2 standards

| 480.1 | SMKA• | 18 | 2.34 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 480.2 | SMKГ | 19 | 3.00 | PN/E |
| 480.3 | *SMKS | 18 | 2.15 | MMS/N |

330-348 AD
RIC VII, p. 655, no. 85
As above, but not dr.
Gloria Exercitus 2 standards
481.1 SMKB 19

336-337 AD
RIC VII, p. 659, no. 126; M7 R 308
Bust laur. FLIVLCONSTANTIVSNOBC
Gloria Exercitus 1 standard

| 482.1 | SMKB | 17 | 1.47 | MMS/N |
| :---: | :---: | :---: | :---: | :---: |
| 482.2 | SMK[.] | 16 | 1.26 | AT |
| 337-339 AD |  |  |  |  |
| RIC VIII, p. 490, nos. 16, 32; M7 R 365 |  |  |  |  |
| Head laur. DNCONSTANTIVSPFAVG |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 483.1 | SMKГ | 16 | 1.47 | F49 |
| 483.2 | SMK ${ }^{\text {U }}$ | 18 | 1.09 | MMS/N |
| 483.3 | SMK[.] | 14 | 1.56 | ByzFort |

347-348 AD
RIC VIII, p. 493, nos. 48, 49; M7 R 369
Head pd. or rd. DNCONSTANTIVSPFAVG
Vot Mult

| 484.1 | SMKA | 16 | 1.27 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 484.2 | SMKA | 15 | 1.42 | MMS/N |
| 484.3 | SMKA | 15 | 1.67 | MMS/N |
| 484.4 | SMKГ | 15 | 1.18 | MMS |
| 484.5 | SMK[.] | 14 | 1.66 | HoB |

Antioch
335 AD
RIC VII, p. 693, no. 88
Bust laur. cuir. FLIVLCONSTANTIVSNOBC
Gloria Exercitus 2 standards

| 485.1 | SMANH | 18 | 2.7 | $M M S / N$ |
| :--- | :--- | :--- | :--- | :--- |

347-348 AD
RIC VIII, p. 521, nos. 113, 118; M7 R 392, 393
Head pd. DNCONSTANTIVSPFAVG
Vot Mult

| 486.1 | SMANA | 15 | 1.06 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 486.2 | SMANA | 14 | 1.63 | NoEx |
| 486.3 | SMANB | 16 | 1.28 | HoB |
| 486.4 | SMANE | 16 | 0.74 | MMS |
| 486.5 | SMANE | 13 | 1.36 | MMS |
| 486.6 | ANT[.] | 15 | 1.52 | MMS/S |

Alexandria
347-348 AD
RIC VIII, p. 541, nos. 33, 36; M7 R 402
As above
Vot Mult

| 487.1 | SMALA | 17 | 1.27 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 487.2 | SMALГ | 15 | 1.20 | MMS/N |


| Uncertain Eastern Mint |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 347-348 AD |  |  |  |  |
| M7 R 408 |  |  |  |  |
| Head pd. or rd. DNCONSTANTIVSPFAVG |  |  |  |  |
| Vot Mult |  |  |  |  |
| 488.1 | 16 | 1.88 | MMS |  |
| 488.2 | 16 | 1.40 | MMS |  |
| 488.3 | 16 | 1.29 | MMS |  |
| 488.4 | 16 | 1.19 | MMS |  |
| 488.5 | 15 | 1.67 | HoB |  |
| 488.6 | 15 | 1.56 | MMS |  |
| 488.7 | 15 | 1.41 | MMS |  |
| 488.8 | 15 | 1.37 | MMS |  |
| 488.9 | 15 | 1.22 | HoB |  |
| 488.10 | 15 | 1.08 | HoB |  |
| 488.11 | 14 | 1.83 | HoB |  |
| 488.12 | 14 | 1.81 | MMS |  |
| 488.13 | 14 | 1.59 | MMS |  |
| 488.14 | 14 | 1.45 | MMS |  |
| 488.15 | 14 | 1.04 | NoE | lipped? |
| 488.16 | 14 | 0.90 | NoE |  |
| 488.17 | 13 | 1.29 | HoB, | pped? |
| 488.18 | 13 | 1.22 | Wadi | clipped |
| 488.19 | 12 | 0.95 | MMS | lipped |
| Uncertain Mint |  |  |  |  |
| 330-348 AD |  |  |  |  |
| Head laur. FLIVLCONSTANTIVSNOBC |  |  |  |  |
| Gloria Exercitus 2 standards |  |  |  |  |
| 489.1 |  | 17 | 2.17 | НоВ |
| 335-337 AD |  |  |  |  |
| As above |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 490.1 |  | 16 | 1.03 | Wadi B |
| 490.2 |  | 15 | 1.50 | MMS/N |
| 337-341 AD |  |  |  |  |
| DNCONSTANTIVSPFAVG |  |  |  |  |
| Gloria Exercitus 1 standard |  |  |  |  |
| 491.1 |  | 17 | 0.90 | НоВ |
| 491.2 |  | 16 | 1.05 | Нов |
| 341-348 AD |  |  |  |  |
| CONSTANTIVSPFAVG |  |  |  |  |
| Victoriae dd Auggq nn |  |  |  |  |
| 492.1 |  | 14 | 1.15 | MMS/S, H2 |
| Constans |  |  |  |  |
| Lugdunит |  |  |  |  |
| 347-348 AD |  |  |  |  |
| RIC VIII, p. 180, no. 47 |  |  |  |  |
| Bust laur. rd. CONSTANSPFAVG |  |  |  |  |
| Victoriae dd Auggq nn, between S |  |  |  |  |
| 493.1 |  | 14 | 1.55 | MMS/N |

Thessalonica
335-336 AD
RIC VII, p. 526, no. 201
Bust laur. CONSTANSNOBCAES
Gloria Exercitus 2 standards

| 494.1 | SMTS[.] 19 | 2.4 | RT |
| :---: | :---: | :---: | :---: |
| 347-348 AD |  |  |  |
| RIC VIII, p. 411, nos. 100, 105; M7 R 431 |  |  |  |
| Bust laur. rd. CONSTANSPFAVG |  |  |  |
| Victoriae dd Auggq nn |  |  |  |
| 495.1 | SMTS[.] 17 | 1.68 | HoB |
| 495.2 | btw, leaf SMTS[.] 15 | 1.61 | HoB |
| 495.3 | btw, dot SMTS[.] 15 | 1.38 |  |

Heraclea
337-340 AD
RIC VIII, p. 431, no. 25; M7 R 432
Bust laur. l. CONSTANSAVG
Gloria Exercitus 1 standard

| 496.1 | SMHB | 15 | 1.36 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 496.2 | SMH[.] | 16 | 1.26 | NoEx |

347-348 AD
RIC VIII, p. 433, no. 47
Head rd. DNCONSTANSPFAVG
Vot Mult
$\begin{array}{lllll}\text { 497.1 } & \text { SMНГ } & 14 & 1.21 & \text { Tomb } 07.1\end{array}$

Constantinople
ca. 330 AD
RIC VIII, p. 450, no. 45; M7 R 440
Head rd. DNCONSTANSPFAVG
Gloria Exercitus 1 standard
$\begin{array}{lllll}\text { 498.1 } & \text { CONS } \Delta & 15 & 0.90 & \text { MMS/N }\end{array}$
ca. 330 AD
RIC VIII, p. 449, no. 29; M7 R 441
As above, but GLORIA EXERCITVS•
499.1 CONSI $16 \quad 1.70$ Wadi B

347-348 AD
RIC VIII, p. 453, no. 70; M7 R 442
As above
Vot Mult
500.1 CONS[.] $15 \quad 1.42 \quad$ HoB

Nicomedia
337-340 AD
RIC VIII, p. 471, nos. 14, 15; M7 R 446, 447
Head laur. pd. or rd. DNCONSTANSPFAVG
Gloria Exercitus 1 standard

| 501.1 | SMNA | 15 | 1.74 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 501.2 | SMNB | 15 | 1.77 | MMS/S |



AE2


355-361 AD
RIC VIII, p. 460, no. 139
DNCONSTANTIVSPFAVG

| Fel Temp Reparatio FH4 | $\bullet \mathrm{M} \bullet$ |  |  |  |
| :--- | :--- | :---: | :--- | :--- | :--- |
| 531.1 | CONS[.] | 17 |  |  |
| 531.02 | NoEx |  |  |  |
| 531.2 | CON[..] | - | frag'y | MMS |

348-361 AD
M7 R 349
As above
Fel Temp Reparatio, FH3 or FH4

| 532.1 | CONS $\Theta$ | 16 | 2.35 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 532.2 | CON[.] | 18 | 1.40 | NoEx |
| 532.3 | CONS[.] | 14 | 1.29 | MD2 |

355-361 AD
RIC VIII, p. 461, nos. 149, 151; M7 R 350
As above
Spes Reipublice

| 533.1 | CONSA branch | 16 | 1.99 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 533.2 | CONSГ branch | 15 | 1.44 | Tomb 07.1 |
| 533.3 | CONS[.] branch | 15 | 2.44 | NoEx |
| 533.4 | CON[..] | 18 | 1.80 | MMS |
| 533.5 | CON[..] | 15 | 1.70 | MMS |

355-361 AD
RIC VIII, p. 461, no. 153; M7 R 351
As above, but C|

| 534.1 | CONSA | 10 | 1.55 | $\mathrm{MMS} / \mathrm{N}$ |
| :--- | :--- | :--- | :--- | :--- |
| 534.2 | CONS[.] | 13 | 1.08 | $\mathrm{MMS} / \mathrm{N}$ |

## Nicomedia

348-351 AD
RIC VIII, p. 476, no. 73
As above
Fel Temp Reparatio phoenix globe
535.1 SMNA $17 \quad 1.40 \quad$ RT

351-361 AD
RIC VIII, p. 479, nos. 96, 104; M7 R 361
As above
Fel Temp Reparatio FH3

| 536.1 | SMNB | 15 | 2.04 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 536.2 | SMN[.] | 15 | 2.21 | CW6 |

351-355 AD
RIC VIII, p. 482, no. 112; M7 R 364
As above
Spes Reipublice
537.1 SMN[.] $17 \quad 1.95 \quad$ HoB

Cyzicus
348-350 AD
RIC VIII, p. 496, no. 84; M7 R 373
Bust l. with globe DNCONSTANTIVSPFAVG

AE3 Fel Temp Reparatio emperor and captives * ${ }^{*}$
538.1 SMKE $22 \quad 3.90$ HoB

348-350 AD
AE3
RIC VIII, p. 496, nos. 89, 90 var.
DNCONSTANTIVSPFAVG
Fel Temp Reparatio phoenix globe
$\begin{array}{llllll}\text { AE3 } & 539.1 & {\underset{N H}{*}}^{*} \text { SMKA } & 17 & 2.11 & \text { CW32 }\end{array}$ 539.2 SMKA $18 \quad 2.62 \quad$ MMS/S

Note that although RIC VIII, p. 496 n. 90 cites Sardis excavations (unpublished) for officina $\Delta$, I read as $A$, and in-trade example with A.

351-354 AD
AE2
RIC VIII, p. 497, nos. 95-96; M7 R 377
AE4 As above
$\begin{array}{lllll}\begin{array}{lll}\text { Fel Temp Reparatio FH3 } \\ \mathbf{5 4 0 . 1} & \frac{\Gamma \mid}{} & \\ \text { •SMKS }\end{array} & 53\end{array}$

351-354 AD
AE2
RIC VIII, p. 498, no. 102; M7 R 380
As above, but on rev. $\cdot \mathrm{S}_{\bullet} \mid$
541.1 SMKB $20 \quad 4.95$ MMS

351-361 AD
AE3
AE4 RIC VIII, p. 498, nos. 104, 110; M7 R 381
As above, nothing in field

| 542.1 | SMKA | 17 | 2.72 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 542.2 | SMKA | 15 | 2.48 | NoEx |
| 542.3 | SMKГ | 20 | 3.74 | MMS |
| 542.4 | SMKГ | 17 | 2.39 | MD2 |
| 542.5 | SMKE | 17 | 1.90 | NoEx |
| 542.6 | SMKE | 16 | 2.35 | ByzFort |
| 542.7 | SMKE | 16 | 1.30 | MMS/S |
| 542.8 | SMK[.] | 17 | 1.90 | BS-E17 |

355-361 AD
RIC VIII, p. 499, no. 115; M7 R 384
AE3 As above
Fel Temp Reparatio FH3 $\cdot \mathrm{M} \bullet \mid$
543.1 SMKA $19 \quad 2.57 \quad$ F55

351-354 AD
RIC VIII, p. 497, no. 92; M7 R 376
As above
AE4 Fel Temp Reparatio FH3 $\underline{\Gamma}$
544.1 SMKA $21 \quad 4.13 \quad$ MMS/N

355-361 AD
RIC VIII, p. 499, no. 117; M7 R 385
As above
Spes Reipublice
AE2 545.1 SMKA
$18 \quad 2.12 \quad \mathrm{MMS} / \mathrm{N}$
$\begin{array}{llll}545.2 & \text { SMKA } & 16 & 1.73 \\ \text { MMS }\end{array}$
$\begin{array}{llll}545.3 & \text { SMKA } & 16 & 1.71\end{array}$

AE3

AE2

AE4


| 557.32 | 14 | 1.63 | MMS/S |  | 559.28 | 14 | 1.59 | F49, H8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 557.33 | 14 | 1.42 | MMS |  | 559.29 | 14 | 1.39 | NoEx |
| 557.34 | 14 | 1.15 | MMS/N |  | 559.30 | 14 | 1.06 | MMS/S, |
| 557.35 | 13 | 1.49 | Wadi B |  |  |  |  | clipped |
| 557.36 | 13 | 0.91 | MMS/S |  | 559.31 | 12 | 1.69 | MMS/N, |
| 557.37 | 12 | 1.10 | MMS/N |  |  |  |  | clipped |
|  |  |  |  |  | 559.32 | 12 | 1.42 | Tomb 07.1, <br> clipped? |
| 351-361 AD |  |  |  | AE3 |  |  |  | clipped? |
| M7 R 414 |  |  |  |  | 559.33 | 12 | frag'y | MMS |
| As above, but FH4 |  |  |  |  | 559.34 | - | frag'y | MMS/N |
| 558.1 | 18 | 2.04 | НоВ |  | 559.35 | - | frag'y | MMS/N |
| 558.2 | 17 | 1.71 | ByzFort |  | 559.36 | - | frag'y | ByzFort |
| 558.3 | 16 | 1.90 | MD2 |  |  |  |  |  |
| 558.4 | 16 | 1.67 | NoEx |  | 355-361 AD |  |  | AE4 |
| 558.5 | 16 | 1.63 | ByzFort |  | M7 R 415 |  |  |  |
| 558.6 | 15 | 2.41 | MMS/N |  | As above |  |  |  |
| 558.7 | 15 | 1.73 | NoEx |  | Spes Reipublice |  |  |  |
| 558.8 | 15 | 1.60 | MMS/N |  | 560.1 | 18 | 1.08 | MMS/N |
| 558.9 | 15 | 1.28 | MMS, H5 |  | 560.2 | 17 | 1.27 | MMS |
| 558.10 | 15 | 1.07 | NoEx |  | 560.3 | 17 | 1.16 | Wadi B |
| 558.11 | 14 | 2.67 | MMS |  | 560.4 | 16 | 2.30 | MMS/N |
| 558.12 | 13 | 1.16 | MMS/N |  | 560.5 | 16 | 2.05 | NoEx |
| 558.13 | 11 | 0.61 | AT-Pac, |  | 560.6 | 16 | 2.01 | Wadi B |
|  |  |  | clipped |  | 560.7 | 16 | 1.87 | ByzFort |
|  |  |  |  |  | 560.8 | 16 | 1.80 | MMS/N |
| 348-361 AD |  |  |  | AE3 | 560.9 | 16 | 1.70 | MMS/N |
| M7 R 412 |  |  |  |  | 560.10 | 16 | 1.68 | MMS |
| As above, but FH un | n var |  |  |  | 560.11 | 16 | 1.60 | NoEx |
| 559.1 | 19 | 3.77 | NoEx |  | 560.12 | 16 | 1.55 | HoB |
| 559.2 | 18 | 1.87 | Wadi B |  | 560.13 | 16 | 1.48 | MMS/N |
| 559.3 | 18 | 1.63 | NoEx |  | 560.14 | 16 | 1.47 | MMS/N |
| 559.4 | 18 | 1.43 | MMS |  | 560.15 | 16 | 1.33 | EH |
| 559.5 | 18 | 1.16 | ByzFort |  | 560.16 | 16 | 1.14 | MMS/N |
| 559.6 | 17 | 2.24 | MMS |  | 560.17 | 15 | 2.29 | NoEx |
| 559.7 | 17 | 2.15 | NoEx |  | 560.18 | 15 | 2.17 | Syn |
| 559.8 | 17 | 2.10 | MMS/N |  | 560.19 | 15 | 2.00 | MMS/N |
| 559.9 | 17 | 2.05 | F55 |  | 560.20 | 15 | 1.93 | MMS |
| 559.10 | 17 | 1.80 | NoEx |  | 560.21 | 15 | 1.84 | ThSt |
| 559.11 | 17 | 1.72 | MMS/S |  | 560.22 | 15 | 1.79 | MMS/N |
| 559.12 | 17 | 1.55 | Wadi B |  | 560.23 | 15 | 1.75 | F49 |
| 559.13 | 16 | 2.21 | NoEx |  | 560.24 | 15 | 1.70 | MMS/N |
| 559.14 | 16 | 1.90 | MMS/N |  | 560.25 | 15 | 1.70 | MMS/N |
| 559.15 | 16 | 1.78 | MD1/S |  | 560.26 | 15 | 1.70 | CW6 |
| 559.16 | 16 | 1.65 | Wadi B |  | 560.27 | 15 | 1.59 | MMS/N |
| 559.17 | 16 | 1.64 | F49 |  | 560.28 | 15 | 1.52 | MMS/S |
| 559.18 | 16 | 1.28 | MMS/N |  | 560.29 | 15 | 1.39 | F49 |
| 559.19 | 15 | 2.40 | MMS/N |  | 560.30 | 15 | 1.21 | MMS/N |
| 559.20 | 15 | 1.83 | MMS |  | 560.31 | 15 | 1.20 | MMS/N |
| 559.21 | 15 | 1.60 | E Road |  | 560.32 | 15 | 1.00 | MMS/N |
| 559.22 | 15 | 1.37 | F55 |  | 560.33 | 15 | frag'y | MMS/N |
| 559.23 | 15 | 1.29 | MMS/N |  | 560.34 | 14 | 1.59 | MMS/N |
| 559.24 | 15 | 0.94 | НоВ |  | 560.35 | 14 | 1.52 | NoEx |
| 559.25 | 15 | 0.83 | MMS/S |  | 560.36 | 14 | 1.49 | MMS |
| 559.26 | 14 | 2.03 | Wadi B |  | 560.37 | 14 | 1.46 | MMS |
| 559.27 | 14 | 1.58 | NoEx |  | 560.38 | 14 | 1.37 | НоВ |








367-375 AD
RIC IX, p. 193, no. 9b
As above
Gloria Romanorum 8, SMHA
$629.1 \quad{ }^{*}$ |wreath $\quad 20 \quad 2.25$ MMS

Constantinople
364-367 AD
RIC IX, p. 215, no. 20b4; M7 R 612
As above
Restitutor Reip, CONSP $\Delta$
$630.1 \quad 15 \quad 2.78 \quad$ AT

364-375 AD
RIC IX, p. 216, no. 21b or 21c; M7 R 617-618
As above
Securitas Reipublicae

| 631.1 | CONSB | 17 | 2.20 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 631.2 | CONSPA | 17 | 2.30 | MMS |
| 631.3 | CONSPB | 18 | 1.62 | MMS |
| 631.4 | CONSP | 17 | 2.49 | Tomb 07.1 |
| 631.5 | CONSP[.] | 17 | 2.21 | NoEx |
| 631.6 | CON[..] | 19 | 1.86 | NoEx |
| 631.7 | CONS[.] | 18 | 1.98 | F55 |
| 631.8 | CON[..] | 6 | 2.31 | NoEx |
| RIC IX, p. 221, no. 42b7 |  |  |  |  |
| 631.9 | $\dot{\bullet}$ | CONSA | 11 | 2.45 |
| 631.10 | $\underline{\text { B }}$ | CONSB | 15 | 1.73 |

367-375 AD
RIC IX, p. 220, no. 41b9; M7 R 625
As above
$\begin{array}{lccc}\text { Gloria Romanorum 8, CONSS } \\ 632.1 & 16 & 2.23 & \text { MMS/S }\end{array}$
375-376 AD
RIC IX, p. 221, no. 42b var.
As above
Securitas Reipublicae C|
633.1 CONSB $\quad 19 \quad 2.06$ Wadi B
$\mathrm{M} / \mathrm{m}$ attested in trade

Nicomedia
364-367 AD
RIC IX, p. 252, no. 12b; M7 R 628
As above
Securitas Reipublicae, SMNB
$\begin{array}{llll}634.1 & 17 & 2.23 & \text { MMS/S }\end{array}$
364-367 AD
RIC IX, p. 252, no. 9c
As above
Gloria Romanorum 8, SMNA
635.116

AE3 Cyzicus
364-367 AD
AE3
RIC IX, p. 241, no. 10b; M7 R 633
As above
Restitutor Reip, SMKB
$636.1 \quad 18 \quad 1.65 \quad \mathrm{MMS} / \mathrm{N}$

AE3 364-375 AD
RIC IX, p. 241, nos. 11b, 13b; M7 R 635
As above
Securitas Reipublicae

| 637.1 | SMKA | 19 | 2.06 | Wadi B |
| :--- | :--- | :--- | :--- | :--- |
| 637.2 | SMKA | 17 | 2.17 | NoEx |
| 637.3 | SMKA | 17 | 2.12 | NoEx |
| 637.4 | SMKB | 19 | 2.39 | MMS/N |
| 637.5 | SMKA or $\Delta$ | 19 | 2.64 | HoB |

364-367 AD
RIC IX, p. 240, nos. 8b, 12b; M7 R 634
As above
Gloria Romanorum 8, SMK[.]
$638.1 \quad 18 \quad 2.01 \quad$ MMS/S
$638.2 \quad 15 \quad 1.87$ NoEx

Antioch
364-367 AD
RIC IX, p. 275, no. 12b
As above
Securitas Reipublicae, ANTA
AE3
639.1

Uncertain Mint
364-367 AD
M7 R 637
As above
AE3 Restitutor Reip
$640.1 \quad 16 \quad 2.13 \quad$ F55
364-375 AD
M7 R 639
As above
Securitas Reipublicae
$\begin{array}{lllll} & 641.1 & 17 & 2.14 & \text { NoEx } \\ \text { AE3 } & 641.2 & 16 & 2.18 & \text { MMS/N }\end{array}$
$641.3 \quad 15 \quad 2.56$ NoEx
$641.4 \quad 15 \quad 2.44$ NoEx
$641.5 \quad 14 \quad 2.29 \quad \mathrm{MMS} / \mathrm{N}$
$641.6 \quad 14$ frag'y MMS/N
$\begin{array}{llll}641.7 & 12 & 1.90 & \text { ByzFort }\end{array}$

AE3
AE3
AE3

AE3

AE3



| Nicomedia <br> 364-367 AD |  |  | 678.7 | 13 | 1.78 | ME3 <br> RIC IX, p. 252, no. 9; M7 R 1009 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| clipped, |  |  |  |  |  |  |  |


| Cyzicus |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 364-375 AD |  |  |  |  |
| RIC IX, p. 241, nos. 11, 13; M7 R 1019 |  |  |  |  |
| Securitas Reipublicae |  |  |  |  |
| 673.1 | SMKB | 14 | 1.38 | MMS/N |
| 673.2 | SMK[.] | 17 | 2.00 | NoEx |
| 364-375 AD |  |  |  |  |
| RIC IX, p. 241, nos. 8, 12; M7 R 1018 |  |  |  |  |
| Gloria Romanorum 8, SMKA |  |  |  |  |
| 674.1 |  | 15 | 1.89 | Tomb 07.1 |
| 674.2 |  | 17 | 1.81 | MMS/N |

AE3 M7 R 1044

| Securitas Reipublicae |  |  |  |
| :--- | :--- | :--- | :--- |
| 679.1 | 18 | 2.61 | $\mathrm{MMS} / \mathrm{S}$ |
| 679.2 | 17 | 2.21 | ThSt |
| 679.3 | 16 | 1.70 | MMS |
| 679.4 | 15 | 1.53 | HoB |
| 679.5 | 14 | 1.54 | $\mathrm{MMS} / \mathrm{N}$ |
| 679.6 | 13 | 1.60 | $\mathrm{MMS} / \mathrm{N}$ |
| 679.7 | 13 | 1.05 | $\mathrm{MMS} / \mathrm{N}$ |

Rev. reads GLORIA ROMANOVM, off. unc.

| Antioch |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 364-367 AD |  |  |  |  |
| RIC IX, p. 274, no. 10; M7 R 1030 |  |  |  |  |
| Gloria Romanorum 8 |  |  |  |  |
| 675.1 | ANTH | 14 | 1.48 | HoB |
| 675.2 | ANT[.] | 14 | 1.04 | PA |
| 364-375 AD |  |  |  |  |
| RIC IX, p. 275, no. 12; M7 R 1031 |  |  |  |  |
| Securitas Reipublicae |  |  |  |  |
| 676.1 | ANTB | 14 | 1.30 | MMS/N |
| 676.2 | ANTT | 17 | 1.70 | MMS/N |
| 676.3 | ANTA | 14 | 1.24 | HoB, clipp |
| 676.4 | ANT[.] | 16 | 1.85 | MMS |

364-375 AD
M7 R 1043
Gloria Romanorum 8

| AE3 | 680.2 | 17 | 1.78 | MMS |
| :--- | :--- | :--- | :--- | :--- |

680.3 17 $\quad 1.71$ MMS
$680.4 \quad 15 \quad 2.43$ ByzFort
$680.5 \quad 15 \quad 2.19 \quad$ F55
$680.6 \quad 15 \quad 1.29 \quad$ HoВ
$680.7 \quad 14 \quad 1.20 \quad \mathrm{MMS} / \mathrm{N}$

AE3
RIC IX, p. 275, no. 12; M7 R 1031
Securitas Reipublicae
364-378 AD
AE3
M7 R 1072
Illeg. rev.

| 681.1 | 16 | 1.39 | Tomb 07.1 |
| :--- | :--- | :--- | :--- |
| 681.2 | 10 | 0.61 | MMS, <br> clipped, H5 |


| Alexandria |
| :--- |
| 364-367 AD |
| RIC IX, p. 298, no. 3; M7 R 1038 |
| Securitas Reipublicae |


|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 677.1 | ALEA |  |  |  |
| 677.2 | ALEB | 12 | 2.00 | MMS/N |
| 677.3 | ALE[.] | 15 | 1.83 | NoEx | |  | 15 | 1.75 | MMS/N |
| :--- | :--- | :--- | :--- |$l$

Valentinian I, Valens, or Gratian
AE3 Constantinople
364-367 AD
AE3
RIC IX, p. 214, no. 16; M7 R 994
Gloria Romanorum 8, CONS[..]

| 682.1 | 18 | 2.68 | MMS |
| :--- | :--- | :--- | :--- |
| 682.2 | 17 | 2.24 | F55 |
| 682.3 | 15 | 1.77 | MMS/N |


| Uncertain Mint |  |  |  |
| :--- | :--- | :--- | :--- |
| 364-367 AD |  |  |  |
| M7 R 1042 |  |  |  |
| Restitutor Reip | 16 | 3.00 | F55 |
| 678.1 | 16 | 2.10 | NoEx |
| 678.2 | 16 | 1.80 | MMS/N |
| 678.3 | 16 | 1.30 | PN/E, |
| 678.4 |  |  | i.d. prob. <br>  <br> 678.5 |
| 678.6 | 14 | 1.40 | MMS/N |
|  | 13 | 1.16 | NoEx, clipped |

Late Roman Coins

| Uncertain Mint |  |  |  |  | 684.52 | 15 | 1.10 | Wadi B |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 364-378 AD |  |  |  | AE3 | 684.53 | 15 | 1.08 | Tomb 07.1 |
| M7 R 1044 |  |  |  |  | 684.54 | 15 | 1.00 | Wadi B |
| Securitas Reipublicae |  |  |  |  | 684.55 | 14 | 1.75 | MMS |
| 684.1 | 18 | 2.30 | BS-E17 |  | 684.56 | 14 | 1.68 | F49, H8 |
| 684.2 | 18 | 1.98 | MMS |  | 684.57 | 14 | 1.67 | Wadi B |
| 684.3 | 18 | 1.87 | MD2 |  | 684.58 | 14 | 1.60 | NoEx |
| 684.4 | 18 | 1.78 | MMS/S |  | 684.59 | 14 | 1.60 | BS-W13 |
| 684.5 | 17 | 3.00 | Wadi B |  | 684.60 | 14 | 1.50 | ByzFort |
| 684.6 | 17 | 2.74 | NoEx |  | 684.61 | 14 | 1.50 | MMS/N |
| 684.7 | 17 | 2.46 | Wadi B |  | 684.62 | 14 | 1.46 | MMS/S |
| 684.8 | 17 | 1.92 | MMS/N |  | 684.63 | 14 | 1.40 | MMS |
| 684.9 | 17 | 1.75 | Wadi B |  | 684.64 | 14 | 1.32 | F49 |
| 684.10 | 17 | 1.72 | MMS |  | 684.65 | 14 | 1.29 | F55 |
| 684.11 | 17 | 1.66 | MMS |  | 684.66 | 14 | 1.12 | MMS/N |
| 684.12 | 17 | 1.57 | F55 |  | 684.67 | 14 | 1.03 | MMS/N |
| 684.13 | 17 | 1.54 | F55 |  | 684.68 | 14 | frag'y | MMS/N |
| 684.14 | 17 | 1.41 | F49 |  | 684.69 | 13 | 2.17 | ByzFort |
| 684.15 | 17 | 1.26 | NoEx |  | 684.70 | 13 | 1.79 | HoB, clipped |
| 684.16 | 17 | 1.21 | MMS/N |  | 684.71 | 13 | 1.64 | LAW |
| 684.17 | 16 | 1.89 | MMS |  | 684.72 | 13 | 1.62 | HoB |
| 684.18 | 16 | 1.88 | Wadi B |  | 684.73 | 13 | 1.40 | MMS/N |
| 684.19 | 16 | 1.83 | NoEx |  | 684.74 | 13 | 1.40 | NoEx |
| 684.20 | 16 | 1.82 | MMS |  | 684.75 | 13 | 1.30 | RT |
| 684.21 | 16 | 1.81 | NoEx |  | 684.76 | 13 | 1.22 | Wadi B |
| 684.22 | 16 | 1.78 | MMS |  | 684.77 | 13 | 1.20 | MMS/N |
| 684.23 | 16 | 1.76 | Wadi B |  | 684.78 | 13 | 1.18 | MMS/N |
| 684.24 | 16 | 1.66 | Wadi B |  | 684.79 | 13 | 1.08 | MMS/N |
| 684.25 | 16 | 1.53 | ByzFort |  | 684.80 | 13 | 0.58 | MMS/N |
| 684.26 | 16 | 1.45 | Wadi B |  | 684.81 | 12 | 1.29 | MMS/N, |
| 684.27 | 16 | 1.30 | ByzFort |  |  |  |  | clipped |
| 684.28 | 16 | 1.25 | MMS/S |  | 684.82 | 12 | 1.00 | MMS/N, |
| 684.29 | 16 | 1.14 | MMS/N |  |  |  |  | clipped |
| 684.30 | 15 | 2.66 | NoEx |  | 684.83 | 12 | 0.99 | ByzFort |
| 684.31 | 15 | 2.33 | MMS |  | 684.84 | 12 | 0.82 | MMS |
| 684.32 | 15 | 2.30 | MMS/N |  | 684.85 | 12 | 0.78 | MMS/S |
| 684.33 | 15 | 2.18 | F55 |  | 684.86 | 11 | 1.39 | MMS/N |
| 684.34 | 15 | 2.10 | MMS/N |  | 684.87 | 11 | 0.89 | MMS |
| 684.35 | 15 | 2.06 | EH |  | 684.88 | 11 | 0.88 | MMS |
| 684.36 | 15 | 2.04 | MMS/N |  | 684.89 | 11 | 0.83 | MMS/N, |
| 684.37 | 15 | 1.98 | MD2 |  |  |  |  | clipped |
| 684.38 | 15 | 1.96 | MMS/N |  | 684.90 | 11 | 0.82 | MMS |
| 684.39 | 15 | 1.95 | MMS/N |  | 684.91 | 11 | frag'y | MMS/N |
| 684.40 | 15 | 1.94 | MMS/S |  | 684.92 | 10 | 1.44 | ByzFort |
| 684.41 | 15 | 1.83 | Wadi B |  | 684.93 | 10 | 1.08 | MMS/N |
| 684.42 | 15 | 1.70 | MMS/S |  | 684.94 | 10 | 0.92 | MMS/N, |
| 684.43 | 15 | 1.67 | F55 |  |  |  |  | clipped? |
| 684.44 | 15 | 1.59 | MMS |  | 684.95 | 10 | 0.88 | ByzFort, H4 |
| 684.45 | 15 | 1.50 | F55 |  | 684.96 | 10 | 0.87 | MMS/N, |
| 684.46 | 15 | 1.43 | ThSt |  |  |  |  | clipped |
| 684.47 | 15 | 1.41 | MMS/N |  | 684.97 | 10 | 0.74 | ByzFort |
| 684.48 | 15 | 1.31 | MMS/N |  | 684.98 | 9 | 1.00 | MMS/N, |
| 684.49 | 15 | 1.20 | MMS/N |  |  |  |  | clipped |
| 684.50 | 15 | 1.14 | HoB |  | 684.99 | 8 | 0.45 | MMS, clipped |
| 684.51 | 15 | 1.11 | F55 |  |  |  |  |  |


| 684.100 | 8 | 0.30 | MMS/N, ancient copy? | 685.45 | 14 | 1.08 | NoEx, clipped? |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 684.101 | 7 | 0.25 | EH, clipped | 685.46 | 14 | 1.04 | NoEx, clipped |
| 684.102 | - | frag'y | MMS/N | 685.47 | 13 | 1.46 | F49, |
| 684.103 | - | frag'y | MMS/N |  |  |  | clipped?, H8 |
| 684.104 | - | frag'y | MMS | 685.48 | 13 | 1.41 | MMS/S |
|  |  |  |  | 685.49 | 13 | 1.36 | MMS/N |
| 364-378 AD |  |  | AE3 | 685.50 | 13 | 1.19 | MMS, |
| M7 R 1043 |  |  |  |  |  |  | clipped, |
| Gloria Romanorum 8 |  |  |  |  |  |  | i.d. poss. |
| 685.1 | 19 | 2.92 | Wadi B | 685.51 | 13 | 1.00 | MMS/N, |
| 685.2 | 19 | 1.49 | Wadi B |  |  |  | clipped |
| 685.3 | 17 | 2.66 | Wadi B | 685.52 | 13 | 0.96 | MMS/S, |
| 685.4 | 17 | 2.66 | NoEx |  |  |  | clipped, H2 |
| 685.5 | 17 | 2.38 | MMS | 685.53 | 13 | 0.91 | MMS, |
| 685.6 | 17 | 2.32 | Tomb 07.1 |  |  |  | clipped, H6 |
| 685.7 | 17 | 2.06 | PA | 685.54 | 13 | 0.79 | MMS/N, |
| 685.8 | 17 | 1.84 | F55 |  |  |  | clipped |
| 685.9 | 17 | 1.75 | MMS | 685.55 | 12 | 1.44 | NoEx, clipped |
| 685.10 | 16 | 2.68 | MMS | 685.56 | 12 | 1.27 | MMS, clipped |
| 685.11 | 16 | 2.46 | Wadi B | 685.57 | 11 | 1.13 | Tomb 07.1, |
| 685.12 | 16 | 2.43 | MMS/S |  |  |  | clipped |
| 685.13 | 16 | 2.29 | NoEx, clipped |  |  |  |  |
| 685.14 | 16 | 2.08 | MD2 | 364-375 AD |  |  | AE3 |
| 685.15 | 16 | 1.53 | F49, clipped | Gloria Novi Sae | titut |  |  |
| 685.16 | 16 | 1.31 | MMS | 686.1 | 15 | 1.77 | NoEx |
| 685.17 | 16 | 1.13 | Wadi B | 686.2 | 14 | 0.45 | MMS/S, |
| 685.18 | 16 | 1.05 | NoEx |  |  |  | clipped |
| 685.19 | 16 | 1.00 | MMS/N | 686.3 | 12 | 1.22 | MMS/N |
| 685.20 | 16 | frag'y | MMS/N |  |  |  |  |
| 685.21 | 15 | 2.10 | NoEx | 364-378 AD |  |  | AE3 |
| 685.22 | 15 | 2.04 | HoB | Uncertain rev. |  |  |  |
| 685.23 | 15 | 1.99 | NoEx | 687.1 | 18 | 2.12 | MD2 |
| 685.24 | 15 | 1.96 | MMS | 687.2 | 15 | 0.84 | F55 |
| 685.25 | 15 | 1.87 | MMS | 687.3 | 12 | 1.49 | NoEx, |
| 685.26 | 15 | 1.80 | MMS |  |  |  | clipped? |
| 685.27 | 15 | 1.75 | MMS |  |  |  |  |
| 685.28 | 15 | 1.72 | F49 | Valen |  |  |  |
| 685.29 | 15 | 1.70 | MMS/N | Aquileia |  |  |  |
| 685.30 | 15 | 1.62 | Wadi B | 383 AD |  |  | AE4 |
| 685.31 | 15 | 1.51 | MD1/S | RIC IX, p. 104, |  |  |  |
| 685.32 | 15 | frag'y | MMS/S | DNVALENTIN | AVG |  |  |
| 685.33 | 14 | 2.76 | NoEx | Vot X Mult XX, |  |  |  |
| 685.34 | 14 | 2.03 | MMS/S, clipped? | 688.1 | 13 | 1.46 | F49 |
| 685.35 | 14 | 2.01 | NoEx | 383-388 AD |  |  | AE4 |
| 685.36 | 14 | 1.96 | NoEx | RIC IX, p. 104, | 7 R |  |  |
| 685.37 | 14 | 1.82 | Wadi B | As above |  |  |  |
| 685.38 | 14 | 1.79 | MMS/N | AQP |  |  |  |
| 685.39 | 14 | 1.62 | NoEx | 689.1 | 14 | 1.39 | NoEx |
| 685.40 | 14 | 1.54 | HoB | 689.2 | 12 | 0.98 | MMS/N |
| 685.41 | 14 | 1.52 | NoEx, clipped |  |  |  |  |
| 685.42 | 14 | 1.41 | NoEx |  |  |  |  |
| 685.43 | 14 | 1.31 | F55, clipped |  |  |  |  |
| 685.44 | 14 | 1.23 | MMS/N |  |  |  |  |









| 778.29 | CONS[.] | 17 | 0.80 | PN/E, clipped | 784.2 | SMN[.] | 15 | 1.54 | NoEx |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 778.30 | CONS[.] | 16 | 1.98 | Tomb. 07.1 |  |  |  |  |  |
| 778.31 | CONS[.] | 16 | 1.80 | MMS/N | Cyzicus |  |  |  |  |
| 778.32 | CONS[.] | - | frag'y | MMS | 383 AD |  |  |  |  |
|  |  |  |  |  | RIC IX, p. 244, no. 20d; M7 R 835 |  |  |  |  |
| 401-403 | AD |  |  | AE3 | DNARCADIVSPFAVG |  |  |  |  |
| RIC X: 86; M7 R 816 |  |  |  |  | Vot V |  |  |  |  |
| Bust facing, helm., cuir., spear, shield DNARCADIVSPFAVG Concordia Augg Cp Victoriola, CONSA |  |  |  |  | 785.1 | SMKA | 13 | 1.45 | MMS/S |
|  |  |  |  |  | 785.2 | SMKB | 14 | 0.93 | F49 |
| 779.1 |  | 19 | 2.38 | MMS/N | 785.3 | SMK $\triangle$ | 15 | 1.01 | NoEx |
| 779.2 |  | 18 | 1.92 | NoEx | 785.4 | SMK $\triangle$ | 14 | 0.72 | NoEx |
| 779.3 |  | 18 | 1.76 | MMS | 785.5 | SMK[.] | 14 | 1.01 | MMS |
|  |  |  |  |  | 785.6 | SMK[.] | 14 | 0.76 | F55 |


| 404-406 AD |  |  |  |
| :--- | :--- | :--- | :--- |
| RIC X: 114 var.; M7 R 814 |  |  |  |
| DNARCADIVSPFAVG |  |  |  |
| Concordia Aug cross     <br> $\mathbf{7 8 0 . 1}$ CONSГ 10 0.76 MMS/S <br> 780.2 CONS[.] 12 0.73 HoB$l$ |  |  |  |

AE4
383-388 AD
AE4

RIC IX, p. 245, no. 25c; M7 R 836
As above
Virtus Exerciti, SMK $\Delta$

| 786.1 | 24 | 5.79 | MMS/S |
| :--- | :--- | :--- | :--- |
| 786.2 | 23 | 4.34 | MMS |

AE2

AE4
AE4 RIC IX, p. 246, nos. 26c1, 30b; M7 R 837
As above
Salus Reipublicae chi-rhol, SMKA

| 787.1 | 13 | 0.97 | MMS/N |
| :--- | :--- | :--- | :--- |
| 787.2 | 13 | 0.80 | MMS |
| 787.3 | 12 | 1.00 | MMS/N |

AE2

| RIC IX, p. 263, no. 46b2; M7 R 825 |  |  |  |
| :--- | :--- | :--- | :--- |
| As above |  |  |  |
| Gloria Romanorum 18, SMNB |  |  |  |
| 782.1 | 22 | 5.53 | MMS/S |
| 782.2 | 22 | 5.06 | HoB |
| 782.3 | 21 | 5.55 | MMS/S |
| 782.4 | 20 | 4.48 | MMS/S |
| 782.5 | 21 | 3.07 | ByzFort |

395-401 AD
RIC X: 62, 64; M7 R 827, 828
As above

| Virtus | Exerciti 2 |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 783.1 | SMNA | 17 | 2.76 | MMS |
| 783.2 | SMNA | 17 | 2.65 | Wadi B |
| 783.3 | SMNA | 17 | 1.92 | MMS/S |
| 783.4 | SMNA | 17 | 1.90 | MMS |
| 783.5 | SMN[.] | 17 | 1.62 | MMS/S |
| 783.6 | I $^{*}$ SMNA | 18 | 3.35 | MMS/N |
| 783.7 | $\downarrow^{*}$ SMNA | 17 | 2.48 | MD2 |

401-403 AD
RIC X: 91; M7 R 830
Bust facing, helm., cuir., spear, shield DNARCADIVSPFAVG
Concordia Auggg Cp Victoriola
$\begin{array}{lllll}784.1 & \text { SMNA } & 18 & 2.72 & \text { MMS/S }\end{array}$
392-395 AD
AE2
RIC IX, p. 247, no. 28c; M7 R 838
As above
Gloria Romanorum 18

| 788.1 | SMKA | 21 | 4.61 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 788.2 | SMKA | 19 | 5.11 | NoEx |
| 788.3 | SMKB | 22 | 4.70 | MMS |
| 788.4 | SMKГ | 22 | 4.64 | MMS |
| 788.5 | SMKГ | 21 | 4.08 | HoB |
| 788.6 | SMKГ | 20 | 3.30 | MMS/N |
| 788.7 | SMKГ | 20 | 2.90 | BS-E18 |

392-395 AD
AE3
RIC IX, p. 247, no. 29c2; M7 R 840
As above
Gloria Romanorum emperor horseback, SMKB

| 789.1 | 17 | 1.63 | NoEx |
| :--- | :--- | :--- | :--- |
| 789.2 | 16 | 1.45 | MMS |

395-401 AD
AE3
RIC X: 66; M7 R 841
As above
Virtus Exerciti 2

| 790.1 | SMKA | 20 | 1.36 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 790.2 | SMKA | 19 | 2.15 | ThSt |
| 790.3 | SMKA | 18 | 2.70 | MMS/S |



| 800.19 | 13 | 1.26 | MMS/N | 803.27 | 15 | 1.26 | MMS/N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 800.20 | 13 | 1.16 | MD2 | 803.28 | 14 | 1.80 | MMS/N |
| 800.21 | 13 | 1.14 | Tomb 07.1 | 803.29 | 14 | 1.71 | MMS/S, H2 |
| 800.22 | 13 | frag'y | MMS/S | 803.30 | 14 | 1.35 | MD1/S |
| 800.23 | 12 | 1.50 | MMS | 803.31 | 14 | 1.21 | MMS/N, |
| 800.24 | 12 | 1.40 | F55 |  |  |  | clipped |
| 800.25 | 12 | 1.15 | RT | 803.32 | 13 | 1.55 | BS-E19 |
| 800.26 | 12 | 0.86 | MMS/S, H2 | 803.33 | 12 | 1.26 | MMS/N, <br> clipped |
| 392-395 AD |  |  | AE2 |  |  |  |  |
| M7 R 860 |  |  |  | 401-403 AD |  |  | AE3 |
| As above |  |  |  | M7 R 862 |  |  |  |
| Gloria Romanorum 18 |  |  |  | Bust facing, helm., cuir., | pear, |  |  |
| 801.1 | 23 | 3.90 | MMS/N | DNARCADIVSPFAVG |  |  |  |
| 801.2 \|* | 21 | 4.50 | BS-E12 | Concordia Augg Cp Victo | riola |  |  |
| 801.3 | 21 | 4.19 | NoEx | 804.1 | 17 | 2.34 | NoEx |
|  |  |  |  | 804.2 | 17 | 2.30 | PN/E |
| 392-395 AD |  |  | AE3 | 804.3 | 17 | 2.14 | NoEx |
| M7 R 859 |  |  |  | 804.4 | 15 | 1.70 | E Road |
| As above |  |  |  |  |  |  |  |
| Gloria Romanorum emp | ror $h$ | back |  | 404-408 AD |  |  | AE4 |
| 802.1 | 17 | 1.85 | НоВ | M7 R 864 |  |  |  |
| 802.2 | 16 | 1.90 | MMS/S | DNARCADIVSPFAVG |  |  |  |
| 802.3 | 16 | 1.62 | НоВ | Concordia Aug(gg) cross |  |  |  |
|  |  |  |  | 805.1 | 14 | 0.92 | MMS/N |
| 395-401 AD |  |  | AE3 | 805.2 | 12 | 0.65 | F55 |
| M7 R 861 |  |  |  | 805.3 | 11 | 0.90 | MMS/N |
| As above |  |  |  |  |  |  |  |
| Virtus Exerciti 2 |  |  |  | 406-408 AD |  |  | AE3 |
| 803.1 | 20 | 2.20 | Wadi B | M7 R 863 |  |  |  |
| 803.2 | 19 | 3.00 | PN/E | As above |  |  |  |
| 803.3 | 19 | 2.34 | NoEx | Gloria Romanorum three | emp |  |  |
| 803.4 | 19 | 1.92 | MMS/S | 806.1 | 16 | 1.58 | AT-Pac |
| 803.5 | 18 | 2.38 | MMS/S | 806.2 | 16 | 1.35 | E Road |
| 803.6 | 18 | 2.00 | MMS/S |  |  |  |  |
| 803.7 | 18 | 1.88 | НоВ | Uncertain Mint |  |  |  |
| 803.8 | 18 | 1.86 | MMS | 383-388 AD |  |  | AE2 |
| 803.9 | 18 | 1.58 | ByzFort | As above |  |  |  |
| 803.10 | 18 | 1.57 | MMS | Gloria Romanorum empe | ror g |  |  |
| 803.11 | 17 | 2.71 | ByzFort | 807.1 | 18 | 2.03 | MMS |
| 803.12 | 17 | 2.57 | F49 |  |  |  |  |
| 803.13 | 17 | 2.45 | НоВ | 383 AD |  |  | AE4 |
| 803.14 | 17 | 2.15 | MMS | M7 R 855 |  |  |  |
| 803.15 | 17 | 1.93 | F55 | As above |  |  |  |
| 803.16 | 17 | 1.60 | Tomb 07.1 | Vot V |  |  |  |
| 803.17 | 17 | 1.09 | MMS/N | 808.1 | 13 | 1.00 | MMS/N |
| 803.18 | 16 | 3.04 | MMS/N | 808.2 | 13 | 0.79 | MMS/S, H2 |
| 803.19 | 16 | 2.48 | MMS/N |  |  |  |  |
| 803.20 | 16 | 2.42 | Tomb 07.1 | 383-408 AD |  |  | AE3 or AE4 |
| 803.21 | 16 | 1.95 | MMS/N | M7 R 865 |  |  |  |
| 803.22 | 16 | 1.87 | MMS | As above |  |  |  |
| 803.23 | 15 | 2.36 | MMS/S | Uncertain type |  |  |  |
| 803.24 | 15 | 1.71 | NoEx | 809.1 | 18 | 2.82 | MMS/N |
| 803.25 | 15 | 1.58 | NoEx | 809.2 | 14 | 1.38 | MMS/S, H2 |
| 803.26 | 15 | 1.39 | MMS |  |  |  |  |








| Uncertain Eastern Mint |  |  |  |  | 885.44 | 15 | 1.90 | MMS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 392-395 AD |  |  |  | AE2 | 885.45 | 15 | 1.80 | MMS/N |
| M7 R 1058 |  |  |  |  | 885.46 | 15 | 1.73 | MMS/N |
| Gloria Romanorum 18 |  |  |  |  | 885.47 | 15 | 1.31 | MMS/N |
| 884.1 | 23 | 5.69 | MD1/S |  | 885.48 | 15 | 1.27 | НоВ |
| 884.2 | 22 | 4.55 | MD1/S |  | 885.49 | 15 | 1.20 | MMS/N |
| 884.3 | 20 | 4.52 | NoEx |  | 885.50 | 15 | 1.15 | MMS/N |
| 884.4 | 20 | 3.41 | F55 |  | 885.51 | 15 | 1.10 | NoEx |
|  |  |  |  |  | 885.52 | 15 | 1.10 | MMS |
| 395-401 AD |  |  |  | AE3 | 885.53 | 15 | 1.01 | MMS/S |
| M7 R 1059 |  |  |  |  | 885.54 | 15 | 0.95 | MMS/N |
| Virtus Exerciti 2 |  |  |  |  | 885.55 | 15 | 0.90 | PN/E |
| 885.1 | 18 | 2.57 | MMS/N |  | 885.56 | 14 | 2.19 | NoEx |
| 885.2 | 18 | 2.41 | НоВ |  | 885.57 | 14 | 2.16 | HoB |
| 885.3 | 18 | 1.96 | F55 |  | 885.58 | 14 | 2.15 | MMS |
| 885.4 | 18 | 1.90 | RT |  | 885.59 | 14 | 1.83 | MMS/S |
| 885.5 | 18 | 1.90 | MMS |  | 885.60 | 14 | 1.82 | NoEx |
| 885.6 | 18 | 1.58 | MMS/N |  | 885.61 | 14 | 1.52 | F49, clipped? |
| 885.7 | 17 | 3.21 | NoEx |  | 885.62 | 14 | 1.30 | MMS |
| 885.8 | 17 | 2.66 | MMS |  | 885.63 | 14 | 1.25 | NoEx |
| 885.9 | 17 | 2.38 | MMS/N |  | 885.64 | 14 | 1.24 | F49, H8 |
| 885.10 | 17 | 2.34 | NoEx |  | 885.65 | 14 | 1.02 | MMS, H5 |
| 885.11 | 17 | 2.31 | MMS/N |  | 885.66 | 14 | 0.78 | NoEx |
| 885.12 | 17 | 2.29 | MMS/N |  | 885.67 | 13 | 2.17 | HoB |
| 885.13 | 17 | 2.23 | НоВ |  | 885.68 | 13 | 2.05 | NoEx |
| 885.14 | 17 | 2.09 | F49 |  | 885.69 | 13 | 1.82 | MMS/N |
| 885.15 | 17 | 2.05 | MMS |  | 885.70 | 13 | 1.80 | MD1/S |
| 885.16 | 17 | 1.93 | MMS/N |  | 885.71 | 13 | 1.71 | MMS/N |
| 885.17 | 17 | 1.83 | MMS |  | 885.72 | 13 | 1.56 | MMS/N |
| 885.18 | 17 | 1.80 | MMS |  | 885.73 | 13 | 1.22 | MMS/N, |
| 885.19 | 17 | 1.72 | NoEx |  |  |  |  | clipped |
| 885.20 | 17 | 1.70 | BS-E14 |  | 885.74 | 13 | 1.22 | MMS, clipped |
| 885.21 | 17 | 1.67 | MMS |  | 885.75 | 13 | 1.11 | MMS, |
| 885.22 | 17 | 1.35 | MMS |  |  |  |  | clipped, H5 |
| 885.23 | 16 | 2.41 | NoEx |  | 885.76 | 13 | frag'y | MMS |
| 885.24 | 16 | 1.97 | MMS |  | 885.77 | 13 | frag'y | MMS |
| 885.25 | 16 | 1.84 | PN |  | 885.78 | 13 | frag'y | F55 |
| 885.26 | 16 | 1.81 | F55 |  | 885.79 | 12 | 1.60 | AT-Pac, |
| 885.27 | 16 | 1.72 | MMS/N |  |  |  |  | clipped |
| 885.28 | 16 | 1.62 | F49, H8 |  | 885.80 | 12 | 1.48 | MMS/S, |
| 885.29 | 16 | 1.60 | MMS/N |  |  |  |  | clipped |
| 885.30 | 16 | 1.59 | NoEx |  | 885.81 | 12 | 1.44 | HoB, clipped |
| 885.31 | 16 | 1.53 | F55 |  | 885.82 | 12 | 0.90 | MMS/N, |
| 885.32 | 16 | 1.51 | NoEx |  |  |  |  | clipped |
| 885.33 | 16 | 1.50 | NoEx |  | 885.83 | 12 | 0.64 | MMS/S, |
| 885.34 | 16 | 1.46 | NoEx |  |  |  |  | clipped |
| 885.35 | 16 | 1.40 | MMS |  | 885.84 | 11 | 1.01 | MMS/N, |
| 885.36 | 16 | 1.33 | MMS/S |  |  |  |  | clipped |
| 885.37 | 16 | 1.08 | F49, H8 |  | 885.85 | - | frag'y | MMS/N |
| 885.38 | 16 | frag'y | NoEx |  | 885.86 | - | frag'y | F55 |
| 885.39 | 16 | frag'y | MMS/N |  | 885.87 | 13x16 | 1.06 | MMS |
| 885.40 | 15 | 2.54 | Wadi B |  |  |  |  |  |
| 885.41 | 15 | 2.50 | MMS/N |  |  |  |  |  |
| 885.42 | 15 | 2.35 | F49 |  |  |  |  |  |
| 885.43 | 15 | 2.00 | MMS/N |  |  |  |  |  |


| 383-408 AD |  |  | AE4 | 886.53 | 10 | 0.26 | MMS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| M7 R 1056 |  |  |  | 886.54 | 15 | 0.78 | НоВ |
| Salus Reipublicae chi-rhol |  |  |  | 886.55 + | 11 | 0.90 | NoEx |
| 886.1 | 15 | 1.67 | NoEx | As above, but | visible |  |  |
| 886.2 | 15 | 0.87 | MMS | 886.56 | 15 | 1.22 | НоВ |
| 886.3 | 14 | 1.96 | NoEx | 886.57 | - | frag'y | MMS |
| 886.4 | 14 | 1.42 | F49, H8 | 886.58 | 14 | 1.16 | F55 |
| 886.5 | 14 | 1.23 | MMS/N | 886.59 | 14 | 1.05 | НоВ |
| 886.6 | 14 | 1.20 | MMS/N | 886.60 | 13 | 1.80 | MMS/S |
| 886.7 | 14 | 1.04 | MMS | 886.61 | 13 | 1.61 | ByzFort |
| 886.8 | 14 | 0.89 | MMS, H6 | 886.62 | 13 | 1.53 | F55 |
| 886.9 | 13 | 1.57 | F49, H8 | 886.63 | 13 | 1.45 | MMS/N |
| 886.10 | 13 | 1.50 | ByzFort, H4 | 886.64 | 13 | 1.41 | MMS/S, H2 |
| 886.11 | 13 | 1.45 | ByzFort | 886.65 | 13 | 1.36 | F55 |
| 886.12 | 13 | 1.40 | MMS/N | 886.66 | 13 | 1.30 | MMS/N |
| 886.13 | 13 | 1.34 | MMS/N | 886.67 | 13 | 1.26 | MMS/N |
| 886.14 | 13 | 1.30 | MMS/N | 886.68 | 13 | 1.26 | MMS/N |
| 886.15 | 13 | 1.17 | NoEx | 886.69 | 13 | 1.25 | Wadi B |
| 886.16 | 13 | 1.04 | NoEx | 886.70 | 13 | 1.21 | F49 |
| 886.17 | 13 | 1.03 | HoB | 886.71 | 13 | 1.16 | MMS/N |
| 886.18 | 13 | 1.02 | Tomb 07.1 | 886.72 | 13 | 1.10 | MMS/N |
| 886.19 | 13 | 0.91 | MMS/S | 886.73 | 13 | 1.07 | Tomb 07.1 |
| 886.20 | 13 | 0.80 | MMS | 886.74 | 13 | 1.07 | Tomb 07.1 |
| 886.21 | 13 | 0.63 | F49, H8 | 886.75 | 13 | 1.03 | NoEx |
| 886.22 | 12 | 1.45 | ByzFort | 886.76 | 13 | 1.00 | Wadi B |
| 886.23 | 12 | 1.40 | HoB | 886.77 | 13 | 1.00 | MMS/S |
| 886.24 | 12 | 1.35 | NoEx | 886.78 | 13 | 0.89 | CW6 |
| 886.25 | 12 | 1.28 | MMS/N | 886.79 | 12 | 1.48 | MMS/N |
| 886.26 | 12 | 1.25 | MMS/N | 886.80 | 12 | 1.46 | HoB |
| 886.27 | 12 | 1.21 | MMS/N | 886.81 | 12 | 1.30 | BS-E17 |
| 886.28 | 12 | 1.18 | F55 | 886.82 | 12 | 1.39 | MMS/N |
| 886.29 | 12 | 1.17 | MMS/S, H2 | 886.83 | 12 | 1.35 | F49, H8 |
| 886.30 | 12 | 1.16 | ByzFort | 886.84 | 12 | 1.40 | F49, H8 |
| 886.31 | 12 | 1.15 | MMS | 886.85 | 12 | 1.30 | MMS/S |
| 886.32 | 12 | 0.97 | MMS | 886.86 | 12 | 1.27 | MMS/N |
| 886.33 | 12 | 0.94 | MMS/S, H2 | 886.87 | 12 | 1.21 | MMS/N |
| 886.34 | 12 | 0.91 | F49, H8 | 886.88 | 12 | 1.20 | MMS/S |
| 886.35 | 12 | 0.80 | RT | 886.89 | 12 | 1.16 | NoEx |
| 886.36 | 12 | 0.76 | MMS | 886.90 | 12 | 1.11 | MMS/S, H2 |
| 886.37 | 12 | 0.73 | MMS/N | 886.91 | 12 | 1.07 | Tomb 07.1 |
| 886.38 | 11 | 1.55 | F49, H8 | 886.92 | 12 | 1.07 | F55 |
| 886.39 | 11 | 1.35 | MMS, H5 | 886.93 | 12 | 1.07 | F55 |
| 886.40 | 11 | 1.32 | MMS/N | 886.94 | 12 | 1.05 | MMS/S, H2 |
| 886.41 | 11 | 1.22 | NoEx | 886.95 | 12 | 1.00 | MMS |
| 886.42 | 11 | 1.03 | MMS/S, H2 | 886.96 | 12 | 0.99 | F55 |
| 886.43 | 11 | 0.97 | MMS/N | 886.97 | 12 | 0.96 | Wadi B |
| 886.44 | 11 | 0.91 | Tomb 07.1 | 886.98 | 12 | 0.93 | MMS |
| 886.45 | 11 | 0.65 | MMS, H5 | 886.99 | 12 | 0.91 | HoB |
| 886.46 | 11 | 0.56 | MMS | 886.100 | 12 | 0.90 | MMS/N |
| 886.47 | 11 | 0.49 | NoEx | 886.101 | 12 | 0.89 | NoEx |
| 886.48 | 11 | 0.40 | MMS/N | 886.102 | 12 | 0.85 | F49 |
| 886.49 | 10 | 1.16 | MMS/N | 886.103 | 12 | 0.75 | MMS |
| 886.50 | 10 | 1.13 | F49 | 886.104 | 12 | 0.73 | MMS |
| 886.51 | 10 | 0.90 | NoEx | 886.105 | 12 | 0.70 | NoEx |
| 886.52 | 10 | 0.55 | F49, H8 | 886.106 | 12 | 0.67 | MMS/N |


| 886.107 | 12 | 0.64 | ThSt | 887.10 | 13 | frag'y | Wadi B |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 886.108 | 12 | 0.64 | MMS/S, H2 | 887.11 | 12 | 1.57 | MMS/N |
| 886.109 | 12 | 0.63 | Tomb 07.1 | 887.12 | 12 | 1.52 | ByzFort |
| 886.110 | 12 | 0.62 | NoEx | 887.13 | 12 | 1.39 | MMS/N |
| 886.111 | 12 | 0.61 | NoEx | 887.14 | 12 | 1.27 | MMS, H7 |
| 886.112 | 12 | 0.60 | Tomb 07.1 | 887.15 | 12 | 1.01 | F55 |
| 886.113 | 12 | 0.56 | NoEx | 887.16 | 12 | 0.92 | MMS |
| 886.114 | 12 | 0.50 | MMS/N | 887.17 | 12 | 0.90 | MMS/S |
| 886.115 | 11 | 1.37 | MMS/S | 887.18 | 12 | 0.83 | MMS/N |
| 886.116 | 11 | 1.30 | NoEx | 887.19 | 12 | 0.83 | MMS |
| 886.117 | 11 | 1.18 | F49, H8 | 887.20 | 12 | 0.79 | F49, H8 |
| 886.118 | 11 | 1.17 | MMS/S, H2 | 887.21 | 12 | 0.79 | Wadi B |
| 886.119 | 11 | 1.15 | MMS, H5 | 887.22 | 12 | 0.73 | MMS |
| 886.120 | 11 | 1.10 | NoEx | 887.23 | 12 | 0.70 | MMS |
| 886.121 | 11 | 1.09 | MMS/N | 887.24 | 12 | frag'y | MMS |
| 886.122 | 11 | 1.06 | NoEx | 887.25 | 11 | 1.50 | MMS/N |
| 886.123 | 11 | 1.01 | NoEx | 887.26 | 11 | 1.41 | NoEx |
| 886.124 | 11 | 0.97 | MMS/N | 887.27 | 11 | 1.30 | MMS/N |
| 886.125 | 11 | 0.86 | AT | 887.28 | 11 | 1.21 | NoEx |
| 886.126 | 11 | 0.82 | F55 | 887.29 | 11 | 1.20 | MMS/N |
| 886.127 | 11 | 0.82 | MMS | 887.30 | 11 | 1.26 | MMS |
| 886.128 | 11 | 0.79 | MMS/N | 887.31 | 11 | 1.19 | NoEx |
| 886.129 | 11 | 0.77 | NoEx | 887.32 | 11 | 1.18 | Wadi B |
| 886.130 | 11 | 0.75 | MMS/S, H2 | 887.33 | 11 | 1.08 | НоВ |
| 886.131 | 11 | 0.72 | MMS/N | 887.34 | 11 | 1.06 | MMS/N |
| 886.132 | 11 | 0.69 | MMS/S | 887.35 | 11 | 1.01 | F49 |
| 886.133 | 11 | 0.63 | MMS | 887.36 | 11 | 1.00 | MMS |
| 886.134 | 10 | 1.25 | MMS/N | 887.37 | 11 | 0.97 | F55 |
| 886.135 | 10 | 1.22 | MMS/S, H2 | 887.38 | 11 | 0.95 | MMS |
| 886.136 | 10 | 1.12 | MMS | 887.39 | 11 | 0.90 | NoEx |
| 886.137 | 10 | 1.07 | MMS | 887.40 | 11 | 0.86 | MMS |
| 886.138 | 10 | 1.05 | MMS/S | 887.41 | 11 | 0.83 | MMS/N |
| 886.139 | 10 | 1.02 | MMS/S | 887.42 | 11 | 0.74 | MMS/N |
| 886.140 | 10 | 0.96 | MMS/N | 887.43 | 11 | 0.70 | MMS |
| 886.141 | 10 | 0.80 | NoEx | 887.44 | 11 | 0.65 | MMS |
| 886.142 | 10 | 0.74 | MMS/N | 887.45 | 11 | frag'y | MMS/N |
| 886.143 | 10 | 0.64 | NoEx | 887.46 | 10 | 1.33 | NoEx |
| 886.144 | 10 | 0.53 | MMS/N | 887.47 | 10 | 1.33 | MMS/S, |
| 886.145 | 10 | frag'y | MMS/N |  |  |  | clipped? |
| 886.146 | 9 | 0.46 | MMS/N | 887.48 | 10 | 0.73 | MMS |
| 886.147 | 9 | frag'y | MMS/N | 887.49 | 10 | 0.71 | MMS |
| 886.148 | 8 | frag'y | MMS/S | 887.50 | 10 | 0.70 | MMS/N |
| 886.149 | - | frag'y | F55 | 887.51 | 10 | 0.66 | MMS |
|  |  |  |  | 887.52 | 10 | 0.60 | MMS/N |
| 364-435 AD |  |  | AE3 or AE4 | 887.53 | 10 | 0.60 | MMS/N |
| Victory l., all else uncertain |  |  |  | 887.54 | 10 | 0.51 | MMS/S, H2 |
| 887.1 | 16 | 2.02 | MMS/S | 887.55 | 10 | 0.50 | MMS/S |
| 887.2 | 14 | 1.63 | MMS | 887.56 | 10 | 0.48 | MMS |
| 887.3 | 13 | 1.86 | ByzFort | 887.57 | 9 | 1.12 | NoEx |
| 887.4 | 13 | 1.66 | NoEx | 887.58 | 9 | 0.75 | MMS |
| 887.5 | 13 | 1.54 | NoEx | 887.59 | 9 | 0.65 | MMS/S |
| 887.6 | 13 | 1.19 | MMS/N | 887.60 | 9 | 0.57 | MMS |
| 887.7 | 13 | 1.11 | HoB, clipped | 887.61 | 9 | 0.40 | MMS |
| 887.8 | 13 | 0.93 | F55 | 887.62 | 8 | 0.40 | RT, clipped |
| 887.9 | 13 | 0.90 | MMS | 887.63 | - | frag'y | MMS |






Arcadius, Honorius, or Theodosius II
Rome

| 402-408 AD |  |  |  |
| :--- | :--- | :--- | :--- |
| M7 R 983 |  |  |  |
| Urbs Roma Felix |  |  |  |
| 930.1 | OF\|Q | 13 | 1.91 | MMS

Constantinople
401-403 AD
M7 R 1002
$\begin{array}{lcrl}\text { Concordia Augg Cp Victoriola, CONSA } & \\ 931.1 & 15 & 1.33 & \text { ByzFort }\end{array}$

406-408 AD
M7 R 1003
Behind bust, * uncertain legend
Gloria Romanorum three emperors

| 932.1 | CONSA | 14 | 1.50 | MD2 |
| :--- | :--- | :--- | :--- | :--- |
| 932.2 | CONS[.] | 15 | 1.45 | NoEx |
| 932.3 | CONS[.] | 13 | 1.06 | NoEx |

Nicomedia
406-408 AD
M7 R 1016
Behind bust, * uncertain legend
Gloria Romanorum three emperors

| 933.1 | SMNA | 17 | 1.77 | MMS |
| :--- | :--- | :--- | :--- | :--- |
| 933.2 | SMNA | 13 | 1.79 | HoB |
| 933.3 | SMNA | 13 | 1.39 | NoEx |
| 933.4 | SMN[.] | 14 | 2.12 | HoB |

408-423 AD
M7 R 1017
As above, but two emperors shield

Cyzicus
406-408 AD
AE3
M7 R 1028
Behind bust, * uncertain legend
Gloria Romanorum three emperors

| AE3 | 935.1 | SMKB | 14 | 1.70 | NoEx |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | 935.2 | SMK $\Delta$ | 14 | 1.51 | NoEx |
|  | 935.3 | SMK[.] | 15 | 1.18 | MMS/S |

Antioch
402 AD
AE3
Bust facing, helm., cuir., spear, shield, uncertain legend Concordia Augg Cp Victoriola, ANT[.]
AE3

| 936.1 | 17 | 1.52 | Wadi B |
| :--- | :--- | :--- | :--- |
| 936.2 | - | frag'y | MMS |

404-406 AD
M7 R 1037
Concordia Aug(gg) cross, ANTA
$937.1 \quad 11 \quad 0.65 \quad \mathrm{MMS} / \mathrm{N}$

AE3 $406-408 \mathrm{AD}$
AE3
M7 R 1036
Behind bust, * uncertain legend
Gloria Romanorum three emperors

| 938.1 | ANTA | 12 | 0.98 | MMS/S, H2 |
| :--- | :--- | :--- | :--- | :--- |
| 938.2 | ANT[.] | 13 | 1.40 | MMS/N |

AE3 Uncertain Mint
401-403 AD
AE3
M7 R 1062
Bust facing, helm., cuir., spear, shield, uncertain legend Concordia Augg Cp Victoriola
AE3 939.1 17
939.2 $16 \quad 2.57$ Wadi B
$939.3 \quad 15 \quad 2.25 \quad$ MMS/S
$939.4 \quad 15 \quad 2.07$ F55
$939.5 \quad 15 \quad 2.04$ HoB
$939.6 \quad 15 \quad 1.75 \quad$ MMS/S
$939.7 \quad 15 \quad 1.60 \quad$ PN/E
$939.8 \quad 15 \quad 1.30 \quad$ PA
$939.9 \quad 15 \quad 1.07$ NoEx
$939.10 \quad 14 \quad 2.30$ MMS
$939.11 \quad 14 \quad 1.95 \quad$ MMS/S
$939.12 \quad 14 \quad 1.89$ HoB
$939.13 \quad 14 \quad 1.33$ MMS
$939.14 \quad 13 \quad 1.85 \quad$ MMS/N
$939.15 \quad 13 \quad 1.44 \quad$ HoB, clipped
$939.16 \quad 12 \quad 1.50 \quad$ NoEx, clipped
$939.17 \quad 12 \quad 1.45 \quad$ MMS/N clipped
$\begin{array}{lllll}\text { AE3 } & 939.18 & 11 & 0.97 & \text { MMS, clipped }\end{array}$
939.19 - frag'y MMS/N
$939.20 \quad 10$ frag'y MMS,
934.1
$934.1 \quad 14 \quad 1.53 \quad$ MMS/N
1.53
MMS/N

| 406-408 AD |  |  | AE3 | 940.48 | 11 | 0.66 | ByzFort, clipped |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| M7 R 1 |  |  |  |  |  |  |  |
| Behind bust, * uncertain legend |  |  |  | 408-423 AD |  |  | AE3 |
| Gloria Romanorum three emperors |  |  |  | M7 R 1067 |  |  |  |
| 940.1 | 18 | 1.29 | HoB | As above, but two emperors shield |  |  |  |
| 940.2 | 17 | 1.51 | MMS | 941.1 | 16 | 1.21 | NoEx |
| 940.3 | 16 | 1.96 | Tomb 07.1 | 941.2 | 16 | 1.00 | MMS/N |
| 940.4 | 16 | 1.58 | MMS/N | 941.3 | 15 | 1.60 | W Road |
| 940.5 | 16 | 1.43 | MMS | 941.4 | 15 | 1.59 | MMS |
| 940.6 | 16 | 1.39 | НоВ | 941.5 | 15 | 1.40 | MMS/N |
| 940.7 | 16 | 1.28 | MMS/N | 941.6 | 15 | 1.40 | HoB |
| 940.8 | 16 | 1.26 | MMS | 941.7 | 15 | 1.36 | F49 |
| 940.9 | 16 | 1.17 | MMS/N | 941.8 | 15 | 1.20 | MMS/N |
| 940.10 | 16 | 0.92 | Wadi B | 941.9 | 15 | frag'y | MMS/N |
| 940.11 | 15 | 2.02 | F55 | 941.10 | 14 | 1.98 | F55 |
| 940.12 | 15 | 1.81 | MMS/N | 941.11 | 14 | 1.64 | Tomb 07.1 |
| 940.13 | 15 | 1.76 | NoEx | 941.12 | 14 | 1.63 | НоВ |
| 940.14 | 15 | 1.70 | MMS/N | 941.13 | 14 | 1.51 | F49 |
| 940.15 | 15 | 1.63 | MMS/S | 941.14 | 14 | 1.01 | MMS |
| 940.16 | 15 | 1.20 | F55 | 941.15 | 14 | 0.68 | ByzFort |
| 940.17 | 15 | 1.20 | NoEx | 941.16 | 13 | 1.77 | MMS/N |
| 940.18 | 15 | 1.11 | F55 | 941.17 | 13 | 1.63 | HoB |
| 940.19 | 15 | 1.00 | MMS | 941.18 | 13 | 1.52 | NoEx |
| 940.20 | 15 | frag'y | F55 | 941.19 | 13 | 1.30 | RT |
| 940.21 | 14 | 2.16 | HoB | 941.20 | 13 | 1.02 | MMS/S, H2 |
| 940.22 | 14 | 1.91 | MMS/N | 941.21 | 12 | 1.19 | F55 |
| 940.23 | 14 | 1.89 | F55 | 941.22 | 11 | 1.25 | MMS/S, H2 |
| 940.24 | 14 | 1.89 | HoB | 941.23 | 11 | 0.60 | MMS/N, |
| 940.25 | 14 | 1.79 | НоВ |  |  |  | clipped |
| 940.26 | 14 | 1.72 | EH | 941.24 | 10 | 0.63 | MMS, |
| 940.27 | 14 | 1.57 | MMS/N |  |  |  | clipped, H5 |
| 940.28 | 14 | 1.22 | MMS | 941.25 | 10 | 0.44 | Tomb 07.1, |
| 940.29 | 14 | 1.10 | MMS/N |  |  |  | clipped |
| 940.30 | 14 | 1.07 | MMS/S | 941.26 | 10 | 0.40 | MMS/S, |
| 940.31 | 14 | 1.05 | MMS/N |  |  |  | clipped |
| 940.32 | 14 | 1.00 | MMS/N | 408-423 AD |  |  | AE3 |
| 940.33 | 13 | 2.31 | MMS/N | M7 R 1068 |  |  |  |
| 940.34 | 13 | 1.71 | MMS/N | As above, but | s gl |  |  |
| 940.35 | 13 | 1.44 | MMS/N | 942.1 | 17 | 2.04 | Tomb 07.1 |
| 940.36 | 13 | 1.35 | HoB | 942.2 | 16 | frag'y | MD2 |
| 940.37 | 13 | 1.34 | NoEx | 942.3 | 15 | 2.20 | MMS/N |
| 940.38 | 13 | 1.32 | MMS/S, | 942.4 | 15 | 2.01 | MMS/N |
|  |  |  | clipped | 942.5 | 15 | 1.50 | MMS/N |
| 940.39 | 13 | 1.26 | NoEx | 942.6 | 15 | 1.49 | MMS/N |
| 940.40 | 13 | 1.24 | NoEx | 942.7 | 15 | 1.48 | MMS/N, |
| 940.41 | 13 | 1.20 | MMS/S, H2 |  |  |  | pierced |
| 940.42 | 13 | 1.19 | MMS | 942.8 | 14 | 1.29 | MMS/N |
| 940.43 | 13 | 0.91 | MMS/N | 942.9 | 14 | 1.18 | MMS/S |
| 940.44 | 12 | 1.45 | Tomb 07.1 | 942.10 | 13 | 1.64 | MMS/N |
| 940.45 | 12 | 0.96 | Tomb 07.1, | 942.11 | 13 | 1.47 | MMS/N |
|  |  |  | clipped | 942.12 | 13 | 1.41 | MMS/S |
| 940.46 | 12 | 0.70 | MMS/N, | 942.13 | 13 | 1.30 | MMS/S |
|  |  |  | clipped | 942.14 | 13 | 1.06 | NoEx |
| 940.47 | 11 | 0.71 | MMS, clipped, H6 | 942.15 | 13 | 0.77 | MMS/N, clipped |




| 963.29 | 12 | 0.60 | MMS/N | 963.83 | 11 | 0.70 | MMS/S, H2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 963.30 | 12 | frag'y | MMS/N, | 963.84 | 11 | 0.64 | MMS, H5 |
|  |  |  | i.d. prob. | 963.85 | 11 | 0.63 | MMS/S, H2 |
| 963.31 | 11 | 1.84 | MMS/S | 963.86 | 11 | 0.60 | MMS/N |
| 963.32 | 11 | 1.34 | NoEx | 963.87 | 11 | 0.60 | MMS/N |
| 963.33 | 11 | 1.33 | Tomb 07.1 | 963.88 | 11 | 0.50 | NoEx |
| 963.34 | 11 | 1.29 | Tomb 07.1 | 963.89 | 11 | 0.37 | MMS/N |
| 963.35 | 11 | 1.24 | Tomb 07.1 | 963.90 | 11 | 0.34 | MMS |
| 963.36 | 11 | 1.22 | MMS | 963.91 | 11 | 0.30 | MMS/N |
| 963.37 | 11 | 1.17 | MMS/N | 963.92 | 11 | frag'y | MMS/N |
| 963.38 | 11 | 1.14 | MD1/S | 963.93 | 10 | 1.90 | MMS |
| 963.39 | 11 | 1.12 | MMS/S, H2 | 963.94 | 10 | 1.58 | ByzFort |
| 963.40 | 11 | 1.10 | MMS/N | 963.95 | 10 | 1.45 | MMS/N |
| 963.41 | 11 | 1.10 | MMS/N | 963.96 | 10 | 1.40 | Tomb 07.1 |
| 963.42 | 11 | 1.10 | MMS/S, H2 | 963.97 | 10 | 1.34 | MMS, H5 |
| 963.43 | 11 | 1.08 | MMS/S, H2 | 963.98 | 10 | 1.32 | Tomb 07.1 |
| 963.44 | 11 | 1.07 | MMS | 963.99 | 10 | 1.27 | MMS/N |
| 963.45 | 11 | 1.07 | F49, H8 | 963.100 | 10 | 1.25 | MMS, H5 |
| 963.46 | 11 | 1.05 | MMS/N | 963.101 | 10 | 1.22 | F49 |
| 963.47 | 11 | 1.04 | MMS/N | 963.102 | 10 | 1.20 | MMS/S, H2 |
| 963.48 | 11 | 1.03 | MMS/N | 963.103 | 10 | 1.13 | MMS/N |
| 963.49 | 11 | 1.00 | MMS/N | 963.104 | 10 | 1.11 | MMS/N |
| 963.50 | 11 | 1.00 | MMS/S, H2 | 963.105 | 10 | 1.04 | MMS/N |
| 963.51 | 11 | 0.97 | MMS/N | 963.106 | 10 | 1.01 | MMS/S, H2 |
| 963.52 | 11 | 0.97 | EH | 963.107 | 10 | 1.00 | MMS/N |
| 963.53 | 11 | 0.97 | MMS/S, H2 | 963.108 | 10 | 1.00 | Tomb 07.1 |
| 963.54 | 11 | 0.96 | MMS/S, H2 | 963.109 | 10 | 0.96 | Tomb 07.1 |
| 963.55 | 11 | 0.95 | MMS/N | 963.110 | 10 | 0.94 | MMS/N |
| 963.56 | 11 | 0.94 | MMS | 963.111 | 10 | 0.91 | НоВ |
| 963.57 | 11 | 0.92 | MMS/S, H2 | 963.112 | 10 | 0.90 | MMS/N |
| 963.58 | 11 | 0.92 | ByzFort, H4 | 963.113 | 10 | 0.86 | MMS |
| 963.59 | 11 | 0.90 | MMS/N | 963.114 | 10 | 0.85 | MMS/S, H2 |
| 963.60 | 11 | 0.89 | MMS/N | 963.115 | 10 | 0.82 | MMS/N |
| 963.61 | 11 | 0.87 | MMS/N | 963.116 | 10 | 0.82 | MMS/S |
| 963.62 | 11 | 0.87 | Tomb 07.1 | 963.117 | 10 | 0.80 | MMS/N |
| 963.63 | 11 | 0.85 | MMS | 963.118 | 10 | 0.80 | MMS/N |
| 963.64 | 11 | 0.84 | MMS/N | 963.119 | 10 | 0.78 | Wadi B |
| 963.65 | 11 | 0.83 | НоВ | 963.120 | 10 | 0.75 | MMS/N |
| 963.66 | 11 | 0.82 | F49, H8 | 963.121 | 10 | 0.70 | MMS |
| 963.67 | 11 | 0.82 | MMS/S, H2 | 963.122 | 10 | 0.70 | MMS/N |
| 963.68 | 11 | 0.80 | MMS/N | 963.123 | 10 | 0.70 | ThSt |
| 963.69 | 11 | 0.78 | Tomb 07.1 | 963.124 | 10 | 0.67 | MMS/N |
| 963.70 | 11 | 0.77 | MMS | 963.125 | 10 | 0.60 | MMS/N |
| 963.71 | 11 | 0.76 | MMS/N | 963.126 | 10 | 0.60 | MMS/N |
| 963.72 | 11 | 0.76 | ThSt | 963.127 | 10 | 0.60 | MMS/N |
| 963.73 | 11 | 0.76 | MMS/N | 963.128 | 10 | 0.60 | MMS/N |
| 963.74 | 11 | 0.75 | MMS | 963.129 | 10 | 0.60 | ByzFort, poss. |
| 963.75 | 11 | 0.75 | MMS/N |  |  |  | ncordia Auggg |
| 963.76 | 11 | 0.74 | ByzFort | 963.130 | 10 | 0.59 | MMS/N |
| 963.77 | 11 | 0.74 | Tomb 07.1 | 963.131 | 10 | 0.56 | MMS |
| 963.78 | 11 | 0.73 | Tomb 07.1 | 963.132 | 10 | 0.55 | NoEx |
| 963.79 | 11 | 0.72 | Tomb 07.1 | 963.133 | 10 | 0.53 | CW6 |
| 963.80 | 11 | 0.71 | Tomb 07.1 | 963.134 | 10 | 0.50 | MMS/N |
| 963.81 | 11 | 0.70 | W Road | 963.135 | 10 | 0.48 | MMS |
| 963.82 | 11 | 0.70 | MMS/N | 963.136 | 10 | 0.48 | MMS/N |



| Cyzicus |  |  | AE4 | 969.38 | 11 | 1.93 | MMS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 450-457 AD |  |  |  | 969.39 | 11 | 1.20 | MMS/N |
| RIC X: 560 |  |  |  | 969.40 | 11 | 1.00 | F49, H8 |
| As above |  |  |  | 969.41 | 11 | 0.99 | F49, H8 |
| Monogram RIC X, type 7, SMKA |  |  |  | 969.42 | 11 | 0.96 | NoEx |
| 968.1 | 11 | 0.76 | MMS/N | 969.43 | 11 | 0.77 | Tomb 07.1 |
| As above but RIC X, type 1, CVZ (RIC X: 561) |  |  |  | 969.44 | 11 | 0.57 | ByzFort, H4 |
| 968.2 | 10 | 0.69 | HoB | 969.45 | 10 | 1.57 | MMS/N |
| As above but RIC X, type 2, CVZ (RIC X: 563); imitation? |  |  |  | 969.46 | 10 | 1.50 | MMS/N |
| 968.3 | 10 | 1.11 | MD1/S | 969.47 | 10 | 1.27 | F49, H8 |
| 968.4 | 9 | 1.32 | MMS, H5 | 969.48 | 10 | 1.20 | MMS/N |
|  |  |  |  | 969.49 | 10 | 1.20 | MMS/N |
| Uncertain Eastern Mint |  |  |  | 969.50 | 10 | 1.10 | MMS/N |
| 400-457 AD |  |  | AE 4 | 969.51 | 10 | 1.01 | MMS |
| As above |  |  |  | 969.52 | 10 | 1.01 | MMS/S |
| Monogram RIC X, type 1 |  |  |  | 969.53 | 10 | 1.00 | MMS |
| 969.1 | 11 | 1.17 | MMS/S, H2 | 969.54 | 10 | 0.99 | MMS/N |
| 969.2 | 10 | 1.23 | Tomb 07.1 | 969.55 | 10 | 0.99 | HoB |
| 969.3 | 10 | 0.71 | MMS/S | 969.56 | 10 | 0.96 | MMS |
| 969.4 | 9 | 0.78 | MMS, H5 | 969.57 | 10 | 0.77 | MMS/N |
| 969.5 | 9 | 0.57 | MMS/N | 969.58 | 10 | 0.67 | MMS/S |
| As above but RIC X, type 2; M7 R 1083, 1085, 1087 |  |  |  | 969.59 | 10 | 0.55 | RT |
| 969.6 + above | 12 | 1.33 | MMS | 969.60 | 10 | 0.40 | MMS/N |
| 969.7 * above | 12 | 0.71 | MMS/N | 969.61 | 9 | 1.17 | MMS |
| 969.8 + above | 11 | 1.32 | MMS/N | 969.62 | 9 | 0.99 | ByzFort, H4 |
| 969.9 | 11 | 0.98 | MMS, H5 | 969.63 | 9 | 0.97 | MMS |
| 969.10 | 11 | 0.96 | ByzFort, H4 | 969.64 | 9 | 0.88 | MMS, H7 |
| 969.11 + above | 11 | 0.74 | MMS/S, H2 | 969.65 | 9 | 0.83 | ByzFort |
| 969.12 * above | 11 | 0.60 | MMS | 969.66 | 9 | 0.78 | MMS, H5 |
| 969.13 | 10 | 1.16 | F49, H8 | 969.67 | 9 | 0.71 | ByzFort, H4 |
| 969.14 + above? | 10 | 1.16 | MMS/S, H2 | 969.68 | 9 | 0.65 | MMS/N |
| 969.15 | 10 | 1.04 | MMS/N | 969.69 | 9 | 0.47 | MMS/N |
| 969.16 + above | 10 | 1.00 | MMS | 969.70 | 9 | 0.46 | MMS |
| 969.17 + above? | 10 | 0.91 | MMS/S, H2 | 969.71 | 9 | 0.32 | HoB |
| 969.18 | 10 | 0.86 | MMS/N | 969.72 | 9 | 0.27 | MMS/N |
| 969.19 + above | 10 | 0.69 | MMS, H6 | 969.73 | 8 | 1.15 | MMS/N |
| 969.20 + or * above | 10 | 0.66 | MMS | 969.74 | 8 | 1.10 | BW-Lat |
| 969.21 + above | 10 | 0.65 | MMS | 969.75 | 8 | 0.85 | MMS/N |
| 969.22 + above | 10 | 0.53 | MMS | 969.76 | 8 | 0.70 | MMS/N |
| 969.23 + or * above | 9 | 1.15 | MMS/S, H2 | 969.77 | 8 | 0.63 | ByzFort, H4 |
| 969.24 + above | 9 | 0.97 | MMS, H6 | 969.78 | 8 | 0.62 | MMS/S, H2 |
| 969.25 + or * above | 9 | 0.69 | MMS/S, H2 | 969.79 | 8 | 0.58 | MMS/N |
| 969.26 + above | 9 | 0.40 | MMS/N | 969.80 | 8 | 0.55 | MMS, H5 |
| As above but RIC X, type 5; M7 R 1080-1081 |  |  |  | 969.81 | 8 | 0.52 | MMS |
| 969.27 | 10 | 1.06 | MMS/N | 969.82 | 8 | 0.46 | MMS/N |
| 969.28 | 10 | 1.00 | MMS/N | 969.83 | 8 | 0.44 | MMS/S, H2 |
| 969.29 | 9 | 1.16 | HoB | 969.84 | 8 | 0.41 | MMS/N |
| 969.30 | 9 | 0.80 | MMS | 969.85 | 8 | 0.38 | НоВ |
| Monogram of uncertain type, M7 R 1088 |  |  |  | 969.86 | 8 | 0.36 | MMS/N |
| 969.31 | 12 | 1.36 | F49, H8 | 969.87 | 7 | 0.74 | MMS, H6 |
| 969.32 | 12 | 1.30 | MMS/S | 969.88 | 7 | 0.69 | MMS |
| 969.33 | 12 | 1.08 | ByzFort, H4 | 969.89 | 7 | 0.60 | MMS/N |
| 969.34 | 12 | 0.90 | Tomb 07.1 | 969.90 | 7 | 0.43 | MMS |
| 969.35 | 12 | 0.85 | MMS/N | 969.91 | 7 | 0.30 | MMS/N |
| 969.36 | 12 | 0.82 | MMS | 969.92 | 7 | 0.30 | MMS/N |


| Uncertain Mint |  |  |  | 975.10 | 10 | 0.89 | MMS/S, H2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 450 AD and later |  |  | AE4 | 975.11 | 9 | 1.18 | MMS/S, H2 |
| Wroth WPBC, p. 31, nos. 107-108 |  |  |  |  |  |  |  |
| Bust r. pd., dots for legend |  |  |  | 457-474 AD |  |  | AE4 |
| Monogram in wreath, imitation |  |  |  | RIC X: 683-688; M7 R 1092 |  |  |  |
| 970.1 | 11 | 0.41 |  | MMS/N | DNLEOPFAVG or sim |  |  |  |
| 970.2 | 8 | 0.33 | MMS/N | RIC X, type 1, monogram in wreath, CON |  |  |  |
|  |  |  |  | 976.1 | 11 | 1.70 | MMS/N |
| Bust r. pd. [...]PFAVG |  |  |  | 976.2 | 10 | 1.23 | MMS/S, H2 |
| Monogram? KYZ (RIC X not) |  |  |  | 976.3 | 10 | 1.16 | MMS/S, H2 |
| 971.1 | 11 | 1.25 | HoB, imit.? | 976.4 | 9 | 0.96 | MMS, H5 |
|  |  |  |  | 976.5 | 8 | 0.82 | MMS/N |
| Leo I |  |  |  | As above, but RIC X, type 4, monogram in wreath, |  |  |  |
| Rome |  |  |  | CON or KOC |  |  |  |
| 457-474 AD |  |  | AE4 | 976.6 | 10 | 0.92 | MMS/S, H2 |
| RIC X: 2628 |  |  |  | As above, but monogram of uncertain type, CON |  |  |  |
| DNLEOPERPETAVG |  |  |  | 976.7 | 11 | 0.85 | MMS/N |
| Victoria Augg |  |  |  | 976.8 | 9 | 0.50 | HoB |
| 972.1 | 10 | 1.90 | MMS | 976.9 | 8 | 0.30 | MMS/N |
| 972.2 | 11 | 0.79 | MMS/N, <br> i.d. poss. |  |  |  | AE4 |
| Thessalonica |  |  | AE4 | RIC X: 700-702; M7 R 1093 |  |  |  |
| 457-474 AD |  |  |  | Uncertain legend |  |  |  |
| RIC X: 695-697; M7 R 1089 |  |  |  | Emperor and captive, CON |  |  |  |
| Uncertain legend |  |  |  | 977.1 | 11 | 0.66 | MMS/N MMS/S, H2 |
| RIC X, type 4 monogram |  |  |  | 977.2 | 10 | 0.83 |  |
| 973.1 | 10 | 0.64 | ByzFort, H4 MMS/N | On obv., * in 1. field |  |  | MMS |
| 973.2 | 9 | 0.40 |  | As above, but M/m CN, RIC X: 703 |  |  |  |
|  |  |  |  | 977.3 | 11 | 1.10 |  |
| Constantinople |  |  |  | $473-474 \mathrm{AD}$ |  |  | AE4 |
| $457-474 \mathrm{AD}$ |  |  | AE4 |  |  |  |  |  |
| $\text { RIC X: 667-668; M7 R } 1091$ |  |  |  | RIC X: 724; M7 R 1095 |  |  |  |
| DNLEOPFAVG or sim |  |  |  | DNLE[...] |  |  |  |
| Lion standing l., looking r. in wreath, CON |  |  |  | Two enthroned emperors, KOC |  |  |  |
| 974.1 | 12 | 1.30 | MMS/N | $\begin{aligned} & 978.1 \\ & 978.2 \end{aligned}$ | 11 | 0.96 | MMS/S, H2 |
| 974.2 | 10 | 1.62 | ByzFort |  | 11 | 0.85 | HoB |
| 974.3 | 10 | 1.11 | MMS/S, H2 |  | 11 | 1.10 | MMS/S, H2 |
| 974.4 | 9 | 1.24 | MMS, H5 | $978.3$ |  |  | M/m KON |
| 974.5 | 9 | 0.85 | MMS |  |  |  |  |
| 974.6 | 8 | 0.41 | MMS | 457-474 AD |  |  | AE4 |
| 974.7 | 12 | 1.01 | MMS/N, <br> i.d. poss. | DNL[...] <br> Uncertain rev., CON |  |  |  |
| 457-474 AD |  |  | AE4 | 979.1 | 10 | 0.57 | MMS/N |
| RIC X: 674 |  |  |  |  |  |  |  |
| DNLEOPFAVG |  |  |  |  | Nicomedia |  |  |  |
| Lion crouching l., head r. in wreath, CON |  |  |  | 457-474 AD |  |  | AE4 |
| 975.1 | 11 | 1.33 |  | MMS/N | RIC X: 669 |  |  |
| 975.2 | 11 | 1.29 | MMS/N | DNAEONSPFAVG |  |  |  |
| 975.3 | 11 | 1.00 | BS-W8 | Lion standing l., head r., NIC |  |  |  |
| 975.4 | 11 | 0.93 | HoB | 980.1 | 11 | 0.74 |  | MMS, H6 |
| 975.5 | 11 | 0.93 | MMS/S, H2 |  |  |  |  |
| 975.6 | 10 | 1.05 | MMS/N |  |  |  |  |
| 975.7 | 10 | 1.04 | MMS/S, H2 |  |  |  |  |
| 975.8 | 10 | 1.00 | MMS |  |  |  |  |
| 975.9 | 10 | 0.95 | MMS/S, H2 |  |  |  |  |



| 985.39 | 8 | 0.39 | MMS | 986.29 | 9 | 0.45 | MMS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| As above, but RIC X, type 1 or type 2 |  |  |  | 986.30 | 9 | 0.42 | MMS/N |
| 985.40 | 8 | 0.46 | MMS/N | 986.31 | 9 | 0.42 | MMS/N |
| As above, but RIC X, type 1 or type 4 |  |  |  | 986.32 | 9 | 0.33 | MMS |
| 985.41 | 9 | 0.93 | ByzFort, H4 | 986.33 | 8 | 0.84 | MMS/N |
| As above, but RIC X, type 5; M7 R 1100 |  |  |  | 986.34 | 8 | 0.60 | MMS/N |
| 985.42 | 10 | 1.01 | MMS, H7 | 986.35 | 7 | 0.30 | MMS |
| As above, but type uncertain; M7 R 1101 |  |  |  |  |  |  |  |
| 985.43 | 11 | 0.96 | ByzFort, H4 | 457-474 AD |  |  | AE4 |
| 985.44 | 11 | 0.47 | ByzFort, H4 | M7 R 1094 |  |  |  |
| 985.45 | 10 | 1.34 | MMS, H5 | Uncertain legend |  |  |  |
| 985.46 | 10 | frag'y | MMS/N | Empress b/E |  |  |  |
| 985.47 | 9 | 0.89 | MMS/S, H2 | 987.1 | 12 | 1.64 | MMS |
| 985.48 | 9 | 0.87 | MMS | 987.2 | 12 | 0.88 | F49, H8 |
| 985.49 | 9 | 0.67 | MMS, H5 | 987.3 | 12 | 0.63 | MMS/N |
| 985.50 | 9 | 0.62 | MMS/S | 987.4 | 11 | 1.24 | MMS/S |
| 985.51 | 9 | 0.62 | MMS/S, H2 | 987.5 | 11 | 1.19 | MMS/N |
|  |  |  | i.d. prob. | 987.6 | 11 | 1.17 | MMS/S, H2 |
| 985.52 | 8 | 0.67 | MMS, H5 | 987.7 | 11 | 1.15 | MMS/N |
| 985.53 | 8 | 0.62 | MMS/N | 987.8 | 11 | 1.07 | MMS/S, H2 |
| 985.54 | 8 | 0.45 | MMS | 987.9 | 11 | 0.99 | F49, i.d. prob. |
| 985.55 | 7 | 0.31 | ByzFort, H4 | 987.10 | 11 | 0.93 | MMS/S, H2 |
|  |  |  |  | 987.11 | 11 | 0.85 | MMS/S, H2 |
| 457-474 AD |  |  | AE4 | 987.12 | 11 | 0.84 | MMS/N |
| M7 R 1102 |  |  |  | 987.13 | 11 | 0.82 | MMS/S |
| Uncertain legend |  |  |  | 987.14 | 11 | 0.73 | MMS/S, H2 |
| Emperor and captive |  |  |  | 987.15 | 11 | 0.62 | MMS/N |
| 986.1 | 13 | 0.97 | F49 | 987.16 | 11 | 0.56 | MMS/N |
| 986.2 | 12 | 1.07 | F49, H8 | 987.17 | 11 | 0.38 | MMS/N |
| 986.3 | 12 | 1.03 | F49, H8 | 987.18 | 10 | 1.32 | MMS/S |
| 986.4 | 12 | 1.03 | MMS/S, H2 | 987.19 | 10 | 1.32 | MMS/S, H2 |
| 986.5 | 11 | 1.13 | MMS/S, H2 | 987.20 | 10 | 1.29 | MMS/S, H2 |
| 986.6 | 11 | 1.07 | MMS | 987.21 | 10 | 1.08 | MMS/S, H2 |
| 986.7 | 11 | 0.92 | MMS/N | 987.22 | 10 | 1.07 | MMS/S, H2 |
| 986.8 | 11 | 0.83 | MMS | 987.23 | 10 | 1.07 | MMS/S, H2 |
| 986.9 | 11 | 0.60 | MMS/S | 987.24 | 10 | 1.06 | ByzFort, H4 |
| 986.10 | 11 | frag'y | MMS/N | 987.25 | 10 | 0.96 | MMS/S, H2 |
| 986.11 | 10 | 1.10 | NoEx | 987.26 | 10 | 0.76 | MMS/S, H2 |
| 986.12 | 10 | 1.00 | MMS/S, H2 | 987.27 | 10 | 0.76 | MMS/S, H2 |
| 986.13 | 10 | 0.93 | MMS/S | 987.28 | 10 | 0.74 | MMS |
| 986.14 | 10 | 0.85 | MMS/S | 987.29 | 10 | 0.72 | MMS |
| 986.15 | 10 | 0.80 | MMS/N | 987.30 | 10 | 0.70 | ThSt |
| 986.16 | 10 | 0.80 | MMS/N | 987.31 | 10 | 0.66 | MMS/S |
| 986.17 | 10 | 0.78 | F55 | 987.32 | 10 | 0.61 | MMS |
| 986.18 | 10 | 0.59 | MMS/S, H2 | 987.33 | 10 | 0.58 | MMS/S, H2 |
| 986.19 | 10 | 0.48 | MMS | 987.34 | 10 | 0.53 | MMS/N |
| 986.20 | 10 | 0.44 | MMS | 987.35 | 9 | 1.10 | Tomb 07.1 |
| 986.21 | 9 | 1.20 | MMS/N | 987.36 | 9 | 0.98 | ByzFort, H4 |
| 986.22 | 9 | 1.13 | MMS/S, H2 | 987.37 | 9 | 0.95 | MD2 |
| 986.23 | 9 | 0.88 | MMS/S, H2 | 987.38 | 9 | 0.93 | MMS/S, H2 |
| 986.24 | 9 | 0.87 | MD2 | 987.39 | 9 | 0.90 | MMS |
| 986.25 | 9 | 0.86 | MMS/S | 987.40 | 9 | 0.89 | MMS/S, H2 |
| 986.26 | 9 | 0.64 | MMS | 987.41 | 9 | 0.84 | MMS/S, H2 |
| 986.27 | 9 | 0.59 | MMS | 987.42 | 9 | 0.72 | F49 |
| 986.28 | 9 | 0.52 | MMS | 987.43 | 9 | 0.71 | ThSt |




| 450-498 AD |  |  | AE4 | 999.53 | 10 | 0.81 | ByzFort |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| M7 R 1112 |  |  |  | 999.54 | 10 | 0.75 | MMS/N |
| Monogram of uncertain emperor |  |  |  | 999.55 | 10 | 0.70 | MMS, H5 |
| 999.1 | 12 | 2.30 | F49 | 999.56 | 10 | 0.69 | MMS |
| 999.2 | 12 | 1.07 | MMS | 999.57 | 10 | 0.69 | ByzFort, H4 |
| 999.3 | 12 | 0.99 | MMS | 999.58 | 10 | 0.68 | MMS/S, H2 |
| 999.4 | 12 | 0.78 | ByzFort | 999.59 | 10 | 0.68 | MMS/N |
| 999.5 | 12 | 0.62 | MMS/N | 999.60 | 10 | 0.67 | MMS, H5 |
| 999.6 | 12 | 0.51 | MMS | 999.61 | 10 | 0.66 | Wadi B |
| 999.7 | 12 | 0.36 | MMS/N | 999.62 | 10 | 0.65 | MMS/N |
| 999.8 | 11 | 1.48 | ByzFort | 999.63 | 10 | 0.65 | MMS |
| 999.9 | 11 | 1.33 | MMS | 999.64 | 10 | 0.64 | MMS |
| 999.10 | 11 | 1.05 | MMS | 999.65 | 10 | 0.63 | MMS, H5 |
| 999.11 | 11 | 1.04 | F49, H8 | 999.66 | 10 | 0.63 | F49, H8 |
| 999.12 | 11 | 1.03 | PA | 999.67 | 10 | 0.63 | MMS |
| 999.13 | 11 | 1.01 | MMS/S, H2 | 999.68 | 10 | 0.62 | MMS/N |
| 999.14 | 11 | 0.85 | MMS/N | 999.69 | 10 | 0.62 | MMS/S, H2 |
| 999.15 | 11 | 0.85 | MMS, H5 | 999.70 | 10 | 0.61 | MMS |
| 999.16 | 11 | 0.80 | MMS/S | 999.71 | 10 | 0.60 | MMS/N |
| 999.17 | 11 | 0.80 | MMS/S | 999.72 | 10 | 0.60 | MMS |
| 999.18 | 11 | 0.74 | MMS/N | 999.73 | 10 | 0.57 | ByzFort, H4 |
| 999.19 | 11 | 0.70 | MMS/N | 999.74 | 10 | 0.57 | MMS |
| 999.20 | 11 | 0.65 | MMS | 999.75 | 10 | 0.56 | MMS |
| 999.21 | 11 | 0.63 | MMS | 999.76 | 10 | 0.56 | MMS |
| 999.22 | 11 | 0.54 | MMS | 999.77 | 10 | 0.54 | MMS/S, H2 |
| 999.23 | 11 | 0.50 | MMS | 999.78 | 10 | 0.54 | MMS |
| 999.24 | 10 | 1.62 | MMS, H5 | 999.79 | 10 | 0.53 | MMS/S, H2 |
| 999.25 | 10 | 1.36 | MMS/N | 999.80 | 10 | 0.50 | MMS/N |
| 999.26 | 10 | 1.35 | MMS/S | 999.81 | 10 | 0.47 | MMS/N |
| 999.27 | 10 | 1.31 | MMS | 999.82 | 10 | 0.47 | MMS/S, H2 |
| 999.28 | 10 | 1.20 | BS-E13 | 999.83 | 10 | 0.45 | MMS/S, H2 |
| 999.29 | 10 | 1.17 | MMS | 999.84 | 10 | 0.39 | MMS |
| 999.30 | 10 | 1.16 | MMS/N | 999.85 | 10 | 0.39 | MMS/N |
| 999.31 | 10 | 1.15 | MMS | 999.86 | 10 | 0.38 | MMS/N |
| 999.32 | 10 | 1.14 | MMS | 999.87 | 10 | 0.38 | F49, H8 |
| 999.33 | 10 | 1.11 | MMS/N | 999.88 | 10 | 0.38 | MMS/S, H2 |
| 999.34 | 10 | 1.10 | Tomb 07.1 | 999.89 | 10 | 0.36 | MMS |
| 999.35 | 10 | 1.08 | MMS | 999.90 | 10 | 0.34 | MMS/N |
| 999.36 | 10 | 1.07 | F55 | 999.91 | 10 | 0.33 | MMS |
| 999.37 | 10 | 1.05 | MMS/N | 999.92 | 10 | 0.32 | MMS/S, H2 |
| 999.38 | 10 | 1.03 | MMS/S, H2 | 999.93 | 10 | 0.28 | MMS |
| 999.39 | 10 | 1.00 | MMS/N | 999.94 | 10 | 0.25 | NoEx |
| 999.40 | 10 | 0.99 | MMS/S, H2 | 999.95 | 10 | frag'y | MMS/N |
| 999.41 | 10 | 0.94 | MMS | 999.96 | 9 | 1.13 | MMS |
| 999.42 | 10 | 0.90 | ByzFort, H4 | 999.97 | 9 | 1.09 | MMS/N |
| 999.43 | 10 | 0.90 | MMS | 999.98 | 9 | 1.08 | MMS/S, H2 |
| 999.44 | 10 | 0.90 | MMS | 999.99 | 9 | 1.06 | MMS |
| 999.45 | 10 | 0.89 | MMS/S, H2 | 999.100 | 9 | 1.04 | MMS/N |
| 999.46 | 10 | 0.88 | ByzFort, H4 | 999.101 | 9 | 1.04 | MMS/N |
| 999.47 | 10 | 0.87 | MMS | 999.102 | 9 | 1.01 | MMS/N |
| 999.48 | 10 | 0.86 | MMS/S, H2 | 999.103 | 9 | 0.99 | MMS/S, H2 |
| 999.49 | 10 | 0.85 | MMS/S, H2 | 999.104 | 9 | 0.97 | HoB |
| 999.50 | 10 | 0.84 | MMS/N | 999.105 | 9 | 0.96 | AT-Pac |
| 999.51 | 10 | 0.83 | MMS | 999.106 | 9 | 0.90 | MMS |
| 999.52 | 10 | 0.83 | F49, H8 | 999.107 | 9 | 0.90 | F49, H8 |


| 999.108 | 9 | 0.89 | MMS/S, H2 | 999.163 | 9 | 0.44 | MMS/S, H2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 999.109 | 9 | 0.89 | MMS/S, H2 | 999.164 | 9 | 0.44 | MMS |
| 999.110 | 9 | 0.86 | MMS | 999.165 | 9 | 0.44 | MMS |
| 999.111 | 9 | 0.85 | MMS/S, H2 | 999.166 | 9 | 0.42 | MMS |
| 999.112 | 9 | 0.85 | MMS/S, H2 | 999.167 | 9 | 0.41 | MMS/N |
| 999.113 | 9 | 0.85 | MMS/N | 999.168 | 9 | 0.38 | MMS |
| 999.114 | 9 | 0.83 | MMS, H5 | 999.169 | 9 | 0.37 | MMS |
| 999.115 | 9 | 0.82 | MMS | 999.170 | 9 | 0.35 | MMS/N |
| 999.116 | 9 | 0.82 | MMS/N | 999.171 | 9 | 0.35 | MMS |
| 999.117 | 9 | 0.81 | MMS/S | 999.172 | 9 | 0.34 | MMS/S |
| 999.118 | 9 | 0.80 | MMS/N | 999.173 | 9 | 0.34 | MMS |
| 999.119 | 9 | 0.80 | MMS/N | 999.174 | 9 | 0.33 | MMS/N |
| 999.120 | 9 | 0.80 | MMS/N | 999.175 | 9 | 0.33 | MMS/N |
| 999.121 | 9 | 0.79 | MMS | 999.176 | 9 | 0.33 | MMS |
| 999.122 | 9 | 0.79 | F49, H8 | 999.177 | 9 | 0.33 | MMS |
| 999.123 | 9 | 0.78 | MMS | 999.178 | 9 | 0.33 | MMS |
| 999.124 | 9 | 0.77 | MMS/N | 999.179 | 9 | 0.31 | MMS |
| 999.125 | 9 | 0.75 | MMS/N | 999.180 | 9 | 0.29 | MMS |
| 999.126 | 9 | 0.74 | MMS/N | 999.181 | 9 | 0.22 | MMS |
| 999.127 | 9 | 0.74 | MMS/N | 999.182 | 9 | 0.14 | MMS/N |
| 999.128 | 9 | 0.73 | MMS | 999.183 | 9 | frag'y | MMS |
| 999.129 | 9 | 0.73 | MMS | 999.184 | 9 | frag'y | MMS/S, H2 |
| 999.130 | 9 | 0.72 | MMS/S, H2 | 999.185 | 9 | frag'y | MMS/N |
| 999.131 | 9 | 0.70 | MMS | 999.186 | 8 | 1.10 | ByzFort |
| 999.132 | 9 | 0.69 | MMS | 999.187 | 8 | 1.02 | MMS/N |
| 999.133 | 9 | 0.68 | MMS | 999.188 | 8 | 1.00 | MMS/N |
| 999.134 | 9 | 0.68 | MMS/S | 999.189 | 8 | 0.92 | MMS/N |
| 999.135 | 9 | 0.67 | MMS | 999.190 | 8 | 0.91 | MMS/S, H2 |
| 999.136 | 9 | 0.66 | MD1/S | 999.191 | 8 | 0.90 | ByzFort |
| 999.137 | 9 | 0.65 | MMS | 999.192 | 8 | 0.86 | MMS/S, H2 |
| 999.138 | 9 | 0.65 | AT | 999.193 | 8 | 0.86 | MMS/S, H2 |
| 999.139 | 9 | 0.64 | НоВ | 999.194 | 8 | 0.86 | MMS, H5 |
| 999.140 | 9 | 0.64 | F49, H8 | 999.195 | 8 | 0.84 | MMS/S, H2 |
| 999.141 | 9 | 0.62 | ByzFort, H4 | 999.196 | 8 | 0.80 | MMS/N |
| 999.142 | 9 | 0.62 | НоВ | 999.197 | 8 | 0.78 | MMS |
| 999.143 | 9 | 0.59 | MMS/S | 999.198 | 8 | 0.75 | MMS |
| 999.144 | 9 | 0.59 | MMS | 999.199 | 8 | 0.74 | MMS |
| 999.145 | 9 | 0.59 | NoEx | 999.200 | 8 | 0.73 | MMS/S, H2 |
| 999.146 | 9 | 0.56 | MMS/N | 999.201 | 8 | 0.69 | MMS, H5 |
| 999.147 | 9 | 0.55 | MMS/S, H2 | 999.202 | 8 | 0.67 | MMS/S, H2 |
| 999.148 | 9 | 0.54 | MMS/S | 999.203 | 8 | 0.65 | MMS/N |
| 999.149 | 9 | 0.53 | MMS/N | 999.204 | 8 | 0.64 | MMS |
| 999.150 | 9 | 0.52 | MMS | 999.205 | 8 | 0.64 | MMS/N |
| 999.151 | 9 | 0.52 | MMS/N | 999.206 | 8 | 0.62 | MMS |
| 999.152 | 9 | 0.51 | MMS/N | 999.207 | 8 | 0.62 | ByzFort |
| 999.153 | 9 | 0.50 | MMS | 999.208 | 8 | 0.62 | MMS/N |
| 999.154 | 9 | 0.50 | MMS | 999.209 | 8 | 0.61 | MMS |
| 999.155 | 9 | 0.50 | MMS | 999.210 | 8 | 0.60 | MMS/S, H2 |
| 999.156 | 9 | 0.49 | MMS | 999.211 | 8 | 0.60 | MMS/N |
| 999.157 | 9 | 0.48 | MMS/N | 999.212 | 8 | 0.60 | MMS/N |
| 999.158 | 9 | 0.48 | MMS/N | 999.213 | 8 | 0.59 | MMS |
| 999.159 | 9 | 0.47 | MMS/S, H2 | 999.214 | 8 | 0.59 | MMS, H5 |
| 999.160 | 9 | 0.47 | MMS/S, H2 | 999.215 | 8 | 0.58 | MMS |
| 999.161 | 9 | 0.47 | MMS/N | 999.216 | 8 | 0.57 | MMS/S, H2 |
| 999.162 | 9 | 0.45 | MMS | 999.217 | 8 | 0.56 | MMS/N |


| 999.218 | 8 | 0.55 | MMS, H5 | 999.273 | 7 | 0.71 | MMS/S, H2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 999.219 | 8 | 0.54 | MMS | 999.274 | 7 | 0.67 | MMS/N |
| 999.220 | 8 | 0.54 | MMS/S | 999.275 | 7 | 0.66 | MMS/S |
| 999.221 | 8 | 0.53 | ByzFort, H4 | 999.276 | 7 | 0.64 | MMS/N |
| 999.222 | 8 | 0.53 | MMS | 999.277 | 7 | 0.60 | MMS/S, H2 |
| 999.223 | 8 | 0.51 | MMS/S, H2 | 999.278 | 7 | 0.57 | MMS |
| 999.224 | 8 | 0.51 | MMS/N | 999.279 | 7 | 0.55 | MMS/S, H2 |
| 999.225 | 8 | 0.51 | NoEx | 999.280 | 7 | 0.54 | MMS/N |
| 999.226 | 8 | 0.51 | MMS/S | 999.281 | 7 | 0.49 | MMS/S, H2 |
| 999.227 | 8 | 0.50 | MMS/S, H2 | 999.282 | 7 | 0.48 | MMS/S, H2 |
| 999.228 | 8 | 0.50 | ByzFort | 999.283 | 7 | 0.47 | MMS/S, H2 |
| 999.229 | 8 | 0.50 | MMS | 999.284 | 7 | 0.47 | MMS/N |
| 999.230 | 8 | 0.49 | MMS | 999.285 | 7 | 0.43 | MMS/S, H2 |
| 999.231 | 8 | 0.48 | MMS/N | 999.286 | 7 | 0.42 | MMS/S |
| 999.232 | 8 | 0.47 | MD2 | 999.287 | 7 | 0.41 | MMS/S, H2 |
| 999.233 | 8 | 0.45 | MMS/S, H2 | 999.288 | 7 | 0.41 | MMS/S, H2 |
| 999.234 | 8 | 0.45 | MMS/N | 999.289 | 7 | 0.40 | MMS |
| 999.235 | 8 | 0.45 | MMS | 999.290 | 7 | 0.40 | MMS |
| 999.236 | 8 | 0.45 | MMS | 999.291 | 7 | 0.39 | MMS/N |
| 999.237 | 8 | 0.45 | MMS/N | 999.292 | 7 | 0.39 | MD2 |
| 999.238 | 8 | 0.44 | ByzFort, H4 | 999.293 | 7 | 0.32 | MMS/N |
| 999.239 | 8 | 0.44 | MMS/S | 999.294 | 7 | 0.30 | MMS |
| 999.240 | 8 | 0.43 | MMS/S, H2 | 999.295 | 7 | 0.29 | MMS/S |
| 999.241 | 8 | 0.41 | MMS/S, H2 | 999.296 | 7 | 0.24 | MMS |
| 999.242 | 8 | 0.41 | MMS/N | 999.297 | 7 | 0.19 | MMS |
| 999.243 | 8 | 0.41 | MMS/N | 999.298 | 6 | 0.48 | MMS/S, H2 |
| 999.244 | 8 | 0.40 | F49, H8 | 999.299 | 6 | 0.31 | MMS |
| 999.245 | 8 | 0.40 | MMS/S | 999.300 | 6 | 0.30 | MMS/N |
| 999.246 | 8 | 0.40 | MMS/S, H2 | 999.301 | 6 | 0.24 | MMS/S, H2 |
| 999.247 | 8 | 0.39 | MMS/S, H2 | 999.302 | 6 | 0.24 | MMS/S, H2 |
| 999.248 | 8 | 0.39 | MMS/N | 999.303 | 6 | 0.22 | MMS |
| 999.249 | 8 | 0.36 | MMS/N | 999.304 | 6 | 0.22 | MMS/S |
| 999.250 | 8 | 0.36 | MMS | 999.305 | 5 | 0.31 | MMS/S |
| 999.251 | 8 | 0.35 | MMS/N | 999.306 | 4 | 0.70 | MMS |
| 999.252 | 8 | 0.35 | MMS | 999.307 | - | frag'y | MMS/N |
| 999.253 | 8 | 0.33 | MMS | 999.308 | - | frag'y | MMS |
| 999.254 | 8 | 0.33 | MMS | 999.309 | - | frag'y | BE-H |
| 999.255 | 8 | 0.33 | MMS/N |  |  |  |  |
| 999.256 | 8 | 0.33 | MMS/N | 400-498 AD? |  | AE 4 ancient imitation |  |
| 999.257 | 8 | 0.32 | MMS/N | Bust l. pd., legend illeg. |  |  |  |
| 999.258 | 8 | 0.32 | ByzFort, H4 | Emperor standing facing, holds captive in r . and spear in l., illeg. legend |  |  |  |
| 999.259 | 8 | 0.32 | MMS |  |  |  |  |
| 999.260 | 8 | 0.31 | MMS/S, H2 | 1000.1 | 10 | 0.55 | MMS/N |
| 999.261 | 8 | 0.31 | MMS/N | Bust l. pd., no legend remains |  |  |  |
| 999.262 | 8 | 0.31 | MMS/N | Emperor standing facing, with (spear) in r., no legend remains |  |  |  |
| 999.263 | 8 | 0.30 | MMS/N | 1000.2 | 10 | 0.36 | HoB |
| 999.264 | 8 | 0.28 | MMS | Bust r. pd. dr. in beaded border, legend obscure |  |  |  |
| 999.265 | 8 | 0.23 | MMS | Emperor stands with spear in r., captive on l., [...]NOR[...] |  |  |  |
| 999.266 | 8 | 0.15 | MMS | 1000.3 | 11 | 1.15 | MMS/S, H2 |
| 999.267 | 8 | frag'y | MMS | Legend over three straight lines, BL? |  |  |  |
| 999.268 | 8 | frag'y | MMS | Emperor? with spear standing l. |  |  |  |
| 999.269 | 7 | 0.99 | ByzFort, H4 | 1000.4 | 9 | 0.24 | MMS/S, H2 |
| 999.270 | 7 | 0.84 | Tomb 07.1 |  |  |  |  |
| 999.271 | 7 | 0.83 | MMS |  |  |  |  |
| 999.272 | 7 | 0.75 | MMS/N |  |  |  |  |

1001. Uncertain Ruler, Uncertain Mint, illegible fourth century $A D$
M7 R 1115: 214 coins
AT: 1 coin
BS: 4 coins
ByzFort: 10 coins
EH: 2 coins
F49: 8 coins, including 3 from H8
F55: 9 coins
HoB: 12 coins
LAW: 1 coin
MD1/S: 1 coin
MD2: 1 coin
MMS: 52 coins, including 2 from H5
MMS/N: 46 coins
MMS/S: 7 coins, including 3 from H2
PN/E: 1 coin
RT: 1 coin
Tomb 07.1: 17 coins
Wadi B: 10 coins
NoEx: 31 coins
1002. Uncertain Ruler, Uncertain Mint, illegible fourth or fifth century $A D$
M7 R 1116: 650 coins
AT: 1 coin
BS: 3 coins
Byz Fort: 21 coins, including 3 from H4
CW6: 1 coin
CW32: 1 coin
E Road: 1 coin
EH: 1 coin
F49: 16 coins, including 13 from H8
F55: 12 coins
HoB: 6 coins
MD1/S: 7 coins
MD2: 4 coins
MMS: 171 coins, including 2 from H 5 and 4 from H6
MMS/N: 281 coins
MMS/S: 41 coins, including 20 from H2
PA: 3 coins
PN/E: 3 coins
Syn: 5 coins
ThSt: 1 coin
Tomb 07.1: 29 coins
Wadi B: 17 coins
NoEx: 25 coins
1003. Uncertain Ruler, Uncertain Mint, illegible fifth century $A D$
Prob. M7 R 1117: 1884 coins, of which 18 are pure lead and 13 are thin flans with arrow-shaped casting sprues.
B: 5 coins
BS: 10 coins
ByzFort: 61 coins, including 24 from H4
E Road: 1 coin
EH: 3 coins
F49: 71 coins, including 50 from H8
F55: 17 coins
HoB: 18 coins
LAW: 1 coin
MD1: 1 coin
MD2: 9 coins
MMS: 699 coins, including 26 from H5, 9 from H6, and 6
from H7
MMS/N: 555 coins
MMS/S: 314 coins, including 241 from H2
PA: 2 coins
PN/E: 3 coins
RT: 3 coins
Syn: 27 coins
ThSt: 7 coins
Tomb 07.1: 49 coins
Wadi B: 8 coins
NoEx: 20 coins

## Byzantine Coins (491-ca. 1250)

Unless stated, coins are copper alloy. The specific entries list the substitute officina (when relevant), die axis (when relevant), diameter, weight, and sector. H1-H8 designates that the coin belongs to one of the hoards discussed in Section 3.6.


Byzantine Coins

| 1004.65 | 9 | 0.64 | MMS/N | 1004.120 | 8 | 0.74 | MMS/S, H2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1004.66 | 9 | 0.64 | MMS/N | 1004.121 | 8 | 0.74 | MMS/S, H2 |
| 1004.67 | 9 | 0.64 | MMS/S, H2 | 1004.122 | 8 | 0.72 | MMS/S, H2 |
| 1004.68 | 9 | 0.63 | MMS/S, H2 | 1004.123 | 8 | 0.71 | MMS/S, H2 |
| 1004.69 | 9 | 0.63 | MMS/S, H2 | 1004.124 | 8 | 0.71 | MMS/S, H2 |
| 1004.70 | 9 | 0.62 | MMS/S, H2 | 1004.125 | 8 | 0.70 | MMS/S, H2 |
| 1004.71 | 9 | 0.61 | MMS | 1004.126 | 8 | 0.67 | MMS/S, H2 |
| 1004.72 | 9 | 0.61 | MMS/S, H2 | 1004.127 | 8 | 0.66 | MMS/S, H2 |
| 1004.73 | 9 | 0.60 | MMS | 1004.128 | 8 | 0.65 | MMS/N |
| 1004.74 | 9 | 0.59 | MMS | 1004.129 | 8 | 0.65 | MMS/S, H2 |
| 1004.75 | 9 | 0.58 | MMS/S, H2 | 1004.130 | 8 | 0.61 | MMS/S, H2 |
| 1004.76 | 9 | 0.57 | MMS/S, H2 | 1004.131 | 8 | 0.61 | MMS/S, H2 |
| 1004.77 | 9 | 0.57 | MMS/S, H2 | 1004.132 | 8 | 0.60 | MMS/N |
| 1004.78 | 9 | 0.56 | MMS/S, H2 | 1004.133 | 8 | 0.59 | MMS/S, H2 |
| 1004.79 | 9 | 0.55 | MMS/S, H2 | 1004.134 | 8 | 0.58 | MMS/S, H2 |
| 1004.80 | 9 | 0.55 | MMS/S, H2 | 1004.135 | 8 | 0.56 | MMS/N |
| 1004.81 | 9 | 0.55 | MMS/N | 1004.136 | 8 | 0.56 | MMS/S, H2 |
| 1004.82 | 9 | 0.53 | MMS/N | 1004.137 | 8 | 0.55 | MMS |
| 1004.83 | 9 | 0.52 | MMS/S, H2 | 1004.138 | 8 | 0.55 | MMS/N |
| 1004.84 | 9 | 0.51 | MMS/S, H2 | 1004.139 | 8 | 0.55 | ThSt |
| 1004.85 | 9 | 0.51 | MMS/S, H2 | 1004.140 | 8 | 0.54 | MMS |
| 1004.86 | 9 | 0.50 | MMS | 1004.141 | 8 | 0.54 | MMS/S, H2 |
| 1004.87 | 9 | 0.47 | MMS/S, H2 | 1004.142 | 8 | 0.52 | MMS/S, H2 |
| 1004.88 | 9 | 0.47 | MMS | 1004.143 | 8 | 0.51 | MMS/S, H2 |
| 1004.89 | 9 | 0.47 | MMS | 1004.144 | 8 | 0.50 | MMS/S, H2 |
| 1004.90 | 9 | 0.45 | НоВ | 1004.145 | 8 | 0.50 | MMS/N |
| 1004.91 | 9 | 0.45 | MMS/N | 1004.146 | 8 | 0.50 | MMS |
| 1004.92 | 9 | 0.45 | MMS/S, H2 | 1004.147 | 8 | 0.49 | НоВ |
| 1004.93 | 9 | 0.42 | MMS/S, H2 | 1004.148 | 8 | 0.49 | MMS/S |
| 1004.94 | 9 | 0.42 | MMS/S, H2 | 1004.149 | 8 | 0.48 | MMS/N |
| 1004.95 | 9 | 0.37 | MMS/S, H2 | 1004.150 | 8 | 0.48 | MMS/S, H2 |
| 1004.96 | 9 | 0.35 | MMS | 1004.151 | 8 | 0.47 | MMS/S, H2 |
| 1004.97 | 9 | 0.33 | MMS/S, H2 | 1004.152 | 8 | 0.47 | MMS/S, H2 |
| 1004.98 | 9 | 0.28 | MMS/S, H2 | 1004.153 | 8 | 0.47 | MMS/S, H2 |
| 1004.99 | 9 | frag'y | MMS/N | 1004.154 | 8 | 0.47 | MMS/S, H2 |
| 1004.100 | 9 | frag'y | MMS/N | 1004.155 | 8 | 0.47 | MMS/N |
| 1004.101 | 9 | frag'y | MMS | 1004.156 | 8 | 0.46 | MMS/S, H2 |
| 1004.102 | 9 | frag'y | MMS/S, H2 | 1004.157 | 8 | 0.45 | MMS/S, H2 |
| 1004.103 | 8 | 1.12 | MMS/S, H2 | 1004.158 | 8 | 0.44 | MMS/N |
| 1004.104 | 8 | 1.08 | MMS/S, H2 | 1004.159 | 8 | 0.44 | MMS |
| 1004.105 | 8 | 1.08 | MMS/S, H2 | 1004.160 | 8 | 0.43 | MMS/S, H2 |
| 1004.106 | 8 | 1.00 | MMS/S, H2 | 1004.161 | 8 | 0.43 | MMS/S, H2 |
| 1004.107 | 8 | 0.95 | MMS/S, H2 | 1004.162 | 8 | 0.42 | MMS/S, H2 |
| 1004.108 | 8 | 0.89 | MMS/S, H2 | 1004.163 | 8 | 0.42 | Syn |
| 1004.109 | 8 | 0.89 | MMS/S, H2 | 1004.164 | 8 | 0.41 | ByzFort |
| 1004.110 | 8 | 0.87 | MMS/S, H2 | 1004.165 | 8 | 0.41 | MMS/S, H2 |
| 1004.111 | 8 | 0.87 | MMS/S, H2 | 1004.166 | 8 | 0.40 | MMS/S, H2 |
| 1004.112 | 8 | 0.82 | MMS/S, H2 | 1004.167 | 8 | 0.40 | MMS/S, H2 |
| 1004.113 | 8 | 0.77 | MMS/S, H2 | 1004.168 | 8 | 0.34 | MMS/S, H2 |
| 1004.114 | 8 | 0.77 | MMS/S, H2 | 1004.169 | 8 | 0.34 | MMS/S, H2 |
| 1004.115 | 8 | 0.76 | MMS/N | 1004.170 | 8 | 0.33 | MMS/S, H2 |
| 1004.116 | 8 | 0.76 | MMS/S, H2 | 1004.171 | 8 | 0.31 | MMS/S, H2 |
| 1004.117 | 8 | 0.75 | MMS/S | 1004.172 | 8 | 0.28 | MMS/S, H2 |
| 1004.118 | 8 | 0.74 | MMS/S, H2 | 1004.173 | 8 | 0.21 | MMS/S, H2 |
| 1004.119 | 8 | 0.74 | MMS/S, H2 | 1004.174 | 8 | 0.20 | MMS |







| 1073.10 A | 6 | 14 | 1.42 | HoB |
| :--- | :--- | :--- | :--- | :--- |
| 1073.11 A | 11 | 15 | 1.75 | $\mathrm{MMS} / \mathrm{N}$ |
| 1073.12 A | 12 | 15 | 1.73 | NoEx |
| 1073.13 A | 4 | 14 | 1.89 | $\mathrm{MMS} / \mathrm{N}$ |
| 1073.14 A | 12 | 16 | 1.75 | $\mathrm{MMS} / \mathrm{N}$ |
| 1073.15 A | 6 | 14 | 1.62 | HoB |
| 1073.16 A | 7 | 14 | 1.60 | $\mathrm{MMS} / \mathrm{N}$ |
| $1073.17 \mathrm{\dagger}$ | 6 | 17 | frag'y | $\mathrm{MMS} / \mathrm{N}$ |
| $1073.18 \dagger$ | 6 | 16 | 1.45 | HoB |
| $1073.19 \dagger$ | 12 | 15 | 2.64 | MMS |
| $1073.20 \dagger$ | - | 15 | 1.92 | $\mathrm{MMS} / \mathrm{N}$ |
| $1073.21 \dagger$ | 11 | 14 | 2.44 | $\mathrm{MMS} / \mathrm{N}$ |
| $1073.22 \dagger$ | 4 | 14 | 2.00 | $\mathrm{MMS} / \mathrm{N}$ |
| $1073.23 \dagger$ | 7 | 14 | 1.96 | $\mathrm{MMS} / \mathrm{N}$ |
| $1073.24 \dagger$ | 7 | 12 | 1.65 | NoEx |
| 1073.25 unc. | 6 | 14 | 1.76 | $\mathrm{MMS} / \mathrm{N}$ |

Note: Although DOC does not clearly differentiate for off. $\dagger$ between Constantinople and Antioch, MIBE II: 29 does, saying a linear border is typical of Constantinople. All the coins above have a linear border.

## Thessalonica

566/7 AD
half-follis
Bust facing helm. cuir. holding gl. cr. and shield with horseman device DNIVSTINVSPPAVC
A/N/N/O K II, above †, below TES
DOC I, p. 220, no. 62

| 1074.1 | 6 | 23 | 6.45 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 1074.2 | 12 | 20 | 4.28 | $M M S / N$ |

567/8 AD half-follis
As above
A/N/N/O K III, above †, below T€S

| DOC I, p. 221, no. 63 |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| 1075.1 | 6 | 23 | 5.27 | NoEx |
| 1075.2 | 6 | 21 | 5.20 | MMS |

568/9 AD half-follis
As above
A/N/N/O K $\Delta$, above $\dagger$, below TES
DOC I, p. 221, no. 64

| 1076.1 | 5 | 20 | 4.60 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 568/9 AD |  |  |  | half-follis |

Enthroned nimbate couple DNIVSTINVSPPAVC
A/N/N/O K $\Delta$, above $\dagger$, below TES
DOC I, p. 221, no. 65

| 1077.1 | 12 | 20 | 7.30 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 1077.2 | 12 | 21 | 5.23 | NoEx |
| 1077.3 | 6 | 21 | 5.63 | NoEx |
| 1077.4 | 6 | 22 | 5.67 | MMS/S |
| 1077.5 | 6 | 22 | 6.13 | MMS/N |

569/70 AD
As above
half-follis
569/70 AD follis
As above
A/N/N/O M 4 , above $\dagger$, in ex. NIKO
DOC I, p. 227, no. 95, off. A
$\begin{array}{lllll}1085.1 & 6 & 29 & 13.40 & \text { MMS/N }\end{array}$

570/1 AD
As above
A/N/N/O M G, above $\dagger$, in ex. NIKO
DOC I, p. 228, no. 96, off. A
$\begin{array}{lllll}1086.1 & 7 & 28 & 13.30 & \text { MMS/S }\end{array}$

A/N/N/O K $€$, above $\dagger$, below T $€$ S
DOC I, p. 221, no. 66
$\begin{array}{lllll}1078.1 & 7 & 20 & 5.46 & M M S / N\end{array}$
569/70 AD half-follis
As above
A/N/N/O K Ч, above †, below TES
DOC I, p. 222, no. 68
$1079.1 \quad 12 \quad 20 \quad 5.74 \quad$ MMS/N
$\begin{array}{lllll}1079.2 & 6 & 22 & 5.52 & \text { НоВ }\end{array}$
569/70 AD half-follis
As above
A/N/N/O K S, above $\dagger$, below TES
DOC I, p. 222, no. 69
$\begin{array}{lllll}1080.1 & 6 & 20 & 5.37 & \text { RT }\end{array}$
574/5 AD
half-follis
As above
A/N/N/O K X, above †, below T€S
DOC I, p. 223, no. 77
$\begin{array}{lllll}1081.1 & 6 & 20 & 5.94 & \text { MMS/S }\end{array}$

574/5 AD half-follis
As above
A/N/N/O K X, above $\dagger / \mathrm{M}$, below T€S
DOC I, p. 224, no. 80
$\begin{array}{lllll}1082.1 & 8 & 21 & 4.90 & M M S / N\end{array}$

575/6 AD half-follis
As above
A/N/N/O K XI, above †, below TES
DOC I, p. 225, no. 82

| 1083.1 | 6 | 20 | 5.40 | MMS/S |
| :--- | :--- | :--- | :--- | :--- |

$\begin{array}{lllll}1083.2 & 6 & 22 & 6.25 & \text { MMS/N }\end{array}$

Nicomedia
566/7 AD
As above
A/N/N/O M II, above $\dagger$, in ex. NIKO
DOC I, p. 226, no. 92, off. A
$\begin{array}{lllll}1084.1 & 12 & 30 & 13.30 & \text { MMS/N }\end{array}$
half-follis
/S
follis


Ostrogothic
Rome, quasi-autonomous
Illeg. obv.
IMVICTA ROMA Wolf and twins XX
BMC Vandals, p. 105, no. 30

| 1105.1 | 10 | 15 | 2.59 | Church EA |
| :--- | :--- | :--- | :--- | :--- |

Vandalic, Thrasamund
Carthage
496-523 AD
Bust r. pd., DNRGTRSI
Victoryl.
BMC Vandals, p. 21, nos. 32-36

| 1106.1 | 4 | 10 | 0.67 | MMS/S, H2 |
| :--- | :--- | :--- | :--- | :--- |
| 1106.2 | 4 | 10 | 0.52 | MMS/S, H2 |
| 1106.3 | 9 | 9 | 0.51 | MMS/S, H2 |
| 1106.4 | 5 | 9 | 0.46 | MMS/S, H2 |
| 1106.5 | 1 | 9 | 0.36 | MMS/S, H2 |
| 1106.6 | 1 | 8 | 0.55 | MMS/S, H2 |
| 1106.7 | - | 8 | 0.27 | MMS/S, H2 |
| 1106.8 | 5 | 8 | 0.35 | MMS/S, H2 |

As above, but Victory r.
Vandalic?
Carthage?
Fourth-sixth century AD
Bust r., rude style
Victory striding 1 .

| 1107.1 | 8 | 10 | 1.00 | $\mathrm{MMS} / \mathrm{N}$ |
| :--- | :--- | :--- | :--- | :--- |
| 1107.2 | - | 9 | 0.60 | ByzFort |

Vandalic anonymous?, cf. BMC Vandals, Victory type 21-31
Bust r.
Palm, letters? in wreath
$\begin{array}{lllll}1108.1 & - & 8 & 0.28 & \mathrm{MMS} / \mathrm{N}\end{array}$
$\longrightarrow$, no legend

Victory striding l., no legend?
1109.1 - 7
0.20

Illeg. obv.
Retrograde VOT
$\begin{array}{lllll}1110.1 & - & 6 & 0.17 & \mathrm{MMS} / \mathrm{N}\end{array}$
nummus?
"Tyche" bust r., mural crown [...]ETMIO[...]
Emperor charging l. with shield in 1. and transverse spear in r. [...]IL[...]
$1111.1 \quad 12 \quad 10 \quad 0.30 \quad \mathrm{MMS} / \mathrm{N}$
For obv., cf. BMC Vandals, p. 106, nos. 34-40

Bust r. pd. III
nummus
Imitative monogram of Marcian
$1112.1 \quad 12 \quad 9 \quad 0.40 \quad$ ByzFort
cf. BMC Vandals, p. 30, no. 98ff
Bust r. pd.
nummus
Garbled monogram?

| 1113.1 | - | 8 | 0.15 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |

As above nummus
Eight-pointed star in wreath
BMC Vandals, p. 38, nos. 165-172
$1114.1 \quad-\quad 9 \quad 0.70 \quad$ MMS/S, H2
Bust r. pd., rude style, no legend visible nummus?
$\begin{array}{lllll}\text { Debased lion standing?, no legend } & & \\ 1115.1 & - & 12 & 0.80 & \text { NoEx }\end{array}$

| Parallel lines, no legend |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Emperor standing? |  | nummus? |  |  |
| 1116.1 | - | 8 | 0.50 | MMS |
| 1116.2 | - | 9 | 0.50 | MMS/S |

BMC Vandals, p. 23, no. $144 \quad \mathrm{~Pb}$ nummus
None
A
$1117.1 \quad$ - $\quad 11 \quad 0.50 \quad$ F55

No image Pb nummus
† $\dagger$ †
$1118.1 \quad-\quad 10 \quad 1.00 \quad$ MMS/N cf. DOC I, p. 82, no. 36, though not Pb; poss. Vandalic (cf. BMC Vandals, p. 34, nos. 141-148) or ancient imitation.

Bust r. rude style nummus Cross pattée in beaded border
$1119.1 \quad-\quad 9 \quad 0.36 \quad$ MMS/N
cf. BMC Vandals, cross type 201v, pl. IV, 44
Bust r.? [...]IFIVS[...]
nummus
TAV/TJVI/• in three lines in beaded border $\begin{array}{lllll}1120.1 & 3 & 10 & 0.42 & \text { MMS/N }\end{array}$
Imitative Vot Mult

Bust r. dr. pd., no legend nummus? Imitative Vot Mult?
1121.1
12
9
MMS/N
decanummium?
Bust l. helm. with plume, necklace, dr., rude style
IIDCII(sign)-II(branch)II
Debased legend, ++ in wreath
$1122.1 \quad-\quad 17 \quad 1.97 \quad$ MMS/N
Imitation INVICTA ROMA, cf. BMC Vandals, p. 67, no. 57








653/4 AD
As above ...ONIKA
A/N/A M N/E/O/S, above *, below unc., in ex. XIIII
DOC II.2, p. 451, no. 71
$\begin{array}{lllll}1230.1 & 6 & 23 & 11.60 & \mathrm{MMS} / \mathrm{N}\end{array}$

655-657 AD follis, class 6
As above EN...
M CTAN, in ex. uncertain number or letter
$1231.1 \quad 12 \quad 23 x 15 \quad 3.10 \quad$ RT

Uncertain Mint, most likely Constantinople
641-650 AD
As above ...NIKA
A/N/A m legend uncertain

| 1232.1 | 12 | $23 \times 15$ | 4.30 | BE-A |
| :--- | :---: | :--- | :--- | :--- |
| 1232.2 | 12 | 25 | 4.10 | BSH |
| o/s on uncertain coin |  |  |  |  |
| 1232.3 | - | 23 | 3.90 | BE-A |
|  |  |  |  |  |
| 641-668 AD    <br> Illeg.    <br> 1233.1 - $19 \times 12$ 2.30 | BE-H |  |  |  |

Tiberius III
Constantinople
698/9 AD
Bust facing cuir. with spear and shield
A/N/N/O M I, above †, below unc. off. letter, in ex. CON
DOC II.2, p. 629, no. 7
$1234.1 \quad-\quad 25 \quad 6.51 \quad$ NoEx

640-700 AD? fals?
Two seated? figures, figure on l. with long cross in $r$. and in l. cross-topped scepter (still to r. of head); on r. consular robes? and gl. cr.?, no legend
A/N/A? m, obscure date, in ex. [..]O[.]
$\begin{array}{lllll}1235.1 & 2 & 22 & 4.20 & \text { Tomb } 07.1\end{array}$

Theophilus
Constantinople
829-830/1 AD follis, class 1
Bust facing in chlamys and crown with cross; in r .
hand patriarchal cross and in l. akakia, in l. field *
*• $\Theta$ EOFILbASIL X/X/X/ M N/N/N, above †, below $\Theta$
DOC III.1, p. 433, no. 13
$\begin{array}{lllll}1238.1 & 6 & 32 & 12.32 & \text { MMS }\end{array}$
$\mathrm{o} / \mathrm{s}$ on uncertain

830-842 AD
follis, class 3
Half-length bust facing in loros and tufa with labarum with
follis cross and streamers in r. and gl. cr. in l. ఆ€OFILbASIL
$+\Theta € O / F I L \in A V g / O V S \tau \in S V /$ nICAS
DOC III.1, p. 435, no. 15a
$\begin{array}{lllll}1239.1 & 6 & 27 & 8.60 & \text { MMS/S }\end{array}$

Leo VI
Constantinople
886-912 AD
follis, class 2
follis Enthroned emperors, between them they hold labarum
+LEONSALEXAnбROS
+LEO/SALEXAn/бROSbASIL'/ROM€On
DOC III.1, p. 517, no. 6
$\begin{array}{lllll}1240.1 & 6 & 26 & 7.10 & \text { NoEx }\end{array}$

886-912 AD
follis, class 3
Bust facing in chlamys and crown with cross; holds akakia
in l. +LEOZbASILEVSROM'
+LEOn/Єn $\Theta \in O b A / S I L \in V S R / O m \in O N$
DOC III.1, p. 519, no. 8
$1241.1 \quad 6 \quad 28 \quad 7.80 \quad$ NoEx
$\begin{array}{llll}1241.2 & 6 & 27 & 6.70\end{array}$

Constantine VII and Romanos I Lekapenos
Constantinople
931-944 AD
follis, class 4
Bust facing in chlamys and crown with cross, holds
in r . labarum scepter with trefoil and in l. gl. cr.
fals? +RWMAn'bASILEVSRWM'
+RWmA/n'Єn $\Theta \in W b A / S I L E V S R W / M A I W n$
DOC III.2, p. 562, no. 25

| 1242.1 | 6 | 27 | 6.53 | MMS/N |
| :--- | :--- | :--- | :--- | :--- |
| 1242.2 | 6 | 26 | 6.64 | NoEx |
| 1242.3 | 12 | 25 | 7.90 | NoEx |

945-ca. 950 AD
follis, class 5
Bust facing in loros and crown with cross, in r. akakia and
in l. gl. cr. +CONST'bASIL'ROM'
+COnST'/Єn $\Theta \in O b A / S I L \in V S R / O M \in O n$
DOC III.2, p. 565, no. 26

| 1243.1 | 6 | 27 | 5.44 | NoEx |
| :--- | :--- | :--- | :--- | :--- |
| 1243.2 | 6 | 25 | 6.85 | F55 |
| 1243.3 | 12 | 22 | 4.99 | NoEx |



Anonymous Follis, class I
Nikephoros III Botaneiates

## Constantinople

ca. 1075-1080 AD
Bust of Christ facing, holds book IX XC
Latin cross overlain by X with pellets between arms, at end of each arm, globule and two pellets; vine scrolls in lower quadrants

| DOC III.2, p. 696 |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 1253.1 | 6 | 22 | 2.13 | PyT |
| 1253.2 | 12 | 26 | 4.54 | NoEx |

Alexios I Komnenos
Constantinople
1092-1118 AD
Bi. aspron trachy, scyphate
Christ enthroned, holds book in l. IC XC
Standing emperor in stemma, scaramangion, holds jeweled scepter in r., l. hand on hip, legend illeg.
Hendy 1969, p. 86, second coinage

| 1254.1 | - | 18 | 3.07 | NoEx |
| :--- | :--- | :--- | :--- | :--- |

Manuel I Komnenos
Constantinople
1143-1180 AD Bi. aspron trachy, scyphate
Christ facing on backless throne IC XC
Standing emperor in stemma, divitision, loros, with
labarum in r. and gl. cr. in l., crowned by Mary M $\Lambda$ N $8 H \Lambda$ $\Delta$ ЄСПОТ МНР ఆV
Hendy 1969, p. 118, fourth coinage

| 1255.1 - 23 3.00 | NoEx |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| Hendy var. A <br> $\mathbf{1 2 5 5 . 2}$ | 6 | 30 | 2.90 | F49 |
| Hendy var. A <br> 1255.3 | 12 | 24 | 2.87 | NoEx |
| Variety uncertain |  |  |  |  |

## Isaac I Komnenos

Nicosia
1184-1191 AD Bi. aspron trachy, scyphate
Virgin enthroned with infant Christ MHP ©V
Emperor standing facing in stemma, divitision, chlamys, holds akakia in l., with St. George facing, in military
tunic, breastplate and sword in l., holding between them patriarchal cross; legend obscure
Hendy 1969, p. 136, type A
$\begin{array}{lllll}1256.1 & 6 & 16 & 3.33 & \text { NoEx }\end{array}$

Bi. aspron trachy, scyphate
Bust of youthful Christ, holds scroll in l., legend obscure Emperor standing facing in stemma, scaramangion and sagion, holds cross-topped scepter in $r$. and akakia in 1 . Manus Dei in upper r. legend obscure
Hendy 1969, p. 136, type B
$1257.1 \quad$ - 25 frag'y NoEx
$\begin{array}{lllll}1257.2 & 6 & 19 & 3.17 & \text { NoEx }\end{array}$

Isaac II Angelos
1185-1195 AD
Bi. aspron trachy, scyphate
Mary enthroned facing with nimbed infant Jesus MHP ©V Emperor standing facing with stemma, divitision, loros and sagion, with cross-topped scepter in r. and akakia in l.
ICAAKKI DECPOTHC, hand of God above
Hendy 1969, p. 144, var. B
$\begin{array}{lllll}1258.1 & 12 & 17 & 2.29 & \text { NoEx }\end{array}$

Alexios III Angelos
Constantinople
1195-1203 AD
Bi. aspron trachy, scyphate
Bust of youthful Christ, holds scroll IX XC
Emperor standing, crowned by St. Constantine; both in stemma, divitision, each with labarum, gl. cr. between, legend illeg.
Hendy 1969, p. 151, uncertain variation
$\begin{array}{lllll}1259.1 & 6 & 27 & 3.15 & \text { MMS }\end{array}$
Latin Imitation
Constantinople
1204-1261 AD Bi. trachy, scyphate
Nothing visible
Emperor standing wearing divitision, holding labarum
topped with cross potent in r .
Hendy 1969, p. 191, type A

| 1260.1 | 12 | 20 | 1.46 | NoEx |
| :--- | :--- | :--- | :--- | :--- |

No obv. image
Emperor standing with saint or Virgin
Hendy 1969, p. 192, type F, N
1261.1 - $23 \quad 1.60 \quad$ NoEx

No obv. image
Standing emperor in stemma, divitision, holding
patriarchal cross-topped scepter held transversely (other hand on hip) $\Theta$ X NIC
Hendy 1969, p. 194, type M?
$1262.1 \quad-\quad 26 \quad 2.29 \quad$ NoEx

John III Doukas Vatatzes
Nicaea
1222-1254 AD Bi. trachy, scyphate
Bust of young Christ facing, with scroll in l. IC XC
Half-length bust facing of emperor in stemma, divitision, sagion with scepter in r. and gl. cr. with patriarchal cross in l. [...]TIO[...]?

Hendy 1969, p. 243, type J, although does not mention rev. legend
$\begin{array}{lllll}1263.1 & 6 & 25 & 2.39 & M M S / N\end{array}$

Magnesia ad Sipylum AE tetarteron
Bust of St. George in tunic, breastplate, sagion, holds spear in $r$. hand and shield in $l$.
Standing emperor in stemma, divitision, sagion with labarum in r . and akakia in $1 . \mathrm{I} \omega / \Delta \mathrm{EC} / \Pi \mathrm{O} / \mathrm{O} / \Delta \Upsilon / \mathrm{K} / \mathrm{A} / \mathrm{C}$ Hendy 1969, p. 245, type C
$\begin{array}{lllll}1264.1 & 6 & 19 & 2.42 & \text { NoEx }\end{array}$

## Manuel Doukas

Constantinople
1230-1237 AD
Bi. trachy, scyphate
Christ enthroned, star to l. and r.
Emperor crowned by Virgin; he holds akakia in r., gl. cr. in 1., wears loros and divitsion. She wears pallium and maphorium, blesses with her l.
Hendy 1969, p. 119
$\begin{array}{lllll}1265.1 & 5 & 26 & 2.99 & \text { NoEx }\end{array}$

Uncertain Ruler
Uncertain Mint
$1100-1350 \mathrm{AD}$ ? follis
Bust of Christ facing
Bust of emperor? facing

| 1266.1 | 12 | 24 | 4.29 | NoEx |  |
| :--- | :--- | :--- | :--- | :--- | :---: |
| Constantinople |  |  |  |  |  |
| 1092-1350 AD |  | Fragment of Bi. trachy, scyphate |  |  |  |
| 1267.1 | - | - | - | NoEx |  |
| 1267.2 | - | 24 | - | EH |  |

## Lead and Other Materials

Bifacial token/tessera

| $\mathbf{L 1}$ | 7 | 11 | 2.74 | F49 |
| :--- | :--- | :--- | :--- | :--- |

Artemis Ephesia/bee with straight wings in linear border. Context in which it was found dates to the early first century AD (Bruce, Final Field Report: F49 12.1, p. 19). A bifacial tessera with this pairing is known from Ephesus; see Gülbay and Kireç, 2008, no. 107.
L2
$23 \quad 0.53 \quad$ F55

Victory l. holding long cross in 1 . hand, linear border/same. Context in which it was found dates to sixth century AD or later; copper alloy (Gallart Marqués, Final Field Report: F55 04.2, p. 7).

## Uniface tokens

L3 $10 \quad 1.20$ NoEx
Seated nude figure l. raising hand to drink (satyr)?; in linear border.

L4 $\quad 10 \quad 0.97 \quad$ ThSt
Anchor, to l. $\Delta$; Hellenistic?
Found in topsoil; see parallel, Gülbay and Kireç 2008, no. 36b.

L5 $\quad 16 \quad 2.40 \quad \mathrm{MMS} / \mathrm{N}$
Cornucopia, to l. $\Gamma$; to r. $\Delta$, in beaded border.
From a Late Roman context. cf. Gülbay and Kireç, 2008, no. 257.

L6 $18 \quad 2.79 \quad$ MMS/S
Theater mask of a young woman.
From a Byzantine context. Parallels in Gülbay and Kireç 2008, nos. 136-139b, 144 and p. 32. This very likely was made as a theater ticket, but could have been used in later periods as a coin (see countermarked examples in Gülbay and Kireç 2008, p. 32).

L7 $12 \quad 1.33 \quad$ NoEx
Herakles standing with club and lionskin, M in l. field. cf. Gülbay and Kireç 2008, nos. 17, 18, 32.

L8 $17 \quad 2.66$ ByzFort
Inscription in three lines, all in wreath: ?E?/TAN (or M)OI/ NOC
Dated 300-400 AD; associated with mosaic subfloor that was dated to fourth century AD by coins, style of mosaic and not contradicted by the pottery associated with the bedding (Ratté, Final Field Report ByzFort 86.12, p. 2).

| L9 | 13 | 1.85 | MMS/S |
| :--- | :---: | :---: | :---: |
| Illeg. |  |  |  |
| L10 | 10 | 1.23 | MD2 |
| Illeg. |  |  |  |

$\begin{array}{lcc}\text { L11 } & 19 & 4.67\end{array} \quad$ NoEx possibly an impression of the object this was placed against. first century BC to second century AD, based on the style of the head. cf. Gülbay and Kireç 2008, nos. 188-189.

## Lead Seals <br> L12 (M64.012) $16 \quad 3.52$ HoB

Head of mature Herakles r., beaded border
Hellenistic-Roman Imperial (note object no., not previously published); cf. Gülbay and Kireç 2008, nos. 205, 214.

L13 $20 \times 24 \quad 15.99$ NoEx
Quadruped walking r.; mg. (see App. 2), pierced for hanging 450-700 AD?
L14 $19 \quad 1.84 \quad \mathrm{MMS} / \mathrm{N}$

Illeg., pierced twice for attachment.

| L15 | 24 | 7.00 | $\mathrm{MMS} / \mathrm{N}$ |
| :--- | :--- | :--- | :--- |
| Illeg. |  |  |  |
| L16 | 17 | 2.92 (broken) NoEx |  |

Bust r., dr., beaded border $\mathrm{DN}(?)[\ldots]$; cross with pendants on each arm: to l . A?, to r . N?, below, W, beaded border, $500-600 \mathrm{AD}$ ?
L17 $26 \quad 9.28$ NoEx

Cruciform invocative mg.: $\Theta E O T O K E$ or KYPIE BO@EI; in quarters, [TW CW] $\Delta \mathrm{OV}-\Lambda \mathrm{W}$; rev. is inscription in 5 ? lines: [missing]/СПАЄ'[K]/OM[.]'OЧ[I?]/K?[...]I/missing? Prob. ninth century AD. The name of the imperial spatharios and comes of the Opsikion is not preserved.

L18 $25 \quad 15.48$ NoEx
Obv.: cruciform invocative mg. in linear border, $\Theta E O T O K E$ $\mathrm{BOH} \Theta \mathrm{EI}$ (nothing in quadrants), wreath border; rev.: inscription in three lines, with cross between triangles above, in wreath $\mathrm{h}(\mathrm{K}$ ? ) ANCГ/PAT $\mathrm{AA} / \mathrm{ATO}(?)$, [uncertain name], strategos (possibly stratelates) of uncertain area, seventh-ninth century AD.

L19 (M66.016) $20 \times 17 \quad 6.70$ PA
Obv.: cruciform invocative mg.: ЄEOTOKE BOH@EI (nothing in quadrants); rev.: cruciform ӨЕОПЕМПТОヱ (Theopemptos)
Note object number, not previously published. cf. Zacos and Veglery 1972, I.3, no. 2830; dated generally by Zacos and Veglery (1972, p. 367) to ca. 550 to the end of the seventh century AD. Seal with the name of a Theopemptos (moderator), in wreath border is dated to the second half of the sixth century AD.

L20 (M88.010) $19 \times 17 \quad 7.14 \quad$ MMS
Obv.: +/ $\Delta \mathrm{IAK} / \mathrm{ON}+$ rev.: +/KOC/MA
Note object number. Found in a mid-sixth century AD wall: Kosmas, deacon. Bilateral seals are dated ca. 500-850 AD by Zacos and Veglery (1972, I, p. 549); published in Greenewalt, Ratté, and Rautman 1994, p. 8, fig. 6, where it is noted that the context of the seal is early evidence for the spread of the office.

## Lead Slugs or Blanks

L21 $9 \quad 0.60 \quad$ MMS/N

Uniface: E, similar to pentanummium mark, similar to coins of 500-600 AD, but much smaller.

| L22 | 21 | 5.00 | MMS |
| :--- | :---: | :---: | :---: |
| Illeg. |  |  |  |
| L23 | 14 | 1.80 | MMS/N |
| No types, found folded over. Also see no. 1003. |  |  |  |
| Clay Token |  |  |  |
| L24 <br> Uniface: amphora with pointed foot. |  |  |  |

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# Concordance of Field Numbers/M13 Numbers 

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| 20.0001 | 1987.0066 |
| 21.0001 | 2008.0014 |
| 21.0002 | 1983.0061 |
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| 1003.0837 | 1985.0193 | 1003.0889 | 1989.0027 | 1003.0941 | 1978.1739 | 1003.0993 | 1979.2009 | 1003.1045 | 1979.1996a |
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| 1003.0844 | 1985.0222 | 1003.0896 | 1992.0123 | 1003.0948 | 1978.1789 | 1003.1000 | 1979.2024 | 1003.1052 | 1980.0017 |
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| 1003.0878 | 1987.0143 | 1003.0930 | 1978.1579 | 1003.0982 | 1979.1986 | 1003.1034 | 1979.2115 | 1003.1086 | 1980.C80.0006 |
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| 1003.0880 | 1987.0153 | 1003.0932 | 1978.1581 | 1003.0984 | 1979.1993 | 1003.1036 | 1979.2123 | 1003.1088 | 1980.C80.0012 |
| 1003.0881 | 1987.0156 | 1003.0933 | 1978.1583 | 1003.0985 | 1979.1994 | 1003.1037 | 1979.2126 | 1003.1089 | 1980.C80.0014 |
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| 1003.0883 | 1987.0164 | 1003.0935 | 1978.1587 | 1003.0987 | 1979.1998 | 1003.1039 | 1979.2136 | 1003.1091 | 1980.C80.0027 |
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| 1003.0885 | 1987.0166 | 1003.0937 | 1978.1719 | 1003.0989 | 1979.2000 | 1003.1041 | 1979.2155 | 1003.1093 | 1980.C80.0043 |
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| 1003.0887 | 1987.0169 | 1003.0939 | 1978.1729 | 1003.0991 | 1979.2005 | 1003.1043 | 1979.2157 | 1003.1095 | 1980.C80.0055 |
| 1003.0888 | 1987.0171 | 1003.0940 | 1978.1730 | 1003.0992 | 1979.2007 | 1003.1044 | 1979.2158 | 1003.1096 | 1980.C80.0056 |


| 1003.1097 | 1980.C80.0065 | 1003.1149 | 1980.0039 | 1003.1201 | 1990.0129 | 1003.1253 | 1991.0138 | 1003.1305 | 1991.0373 |
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| 1003.1099 | 1980.C80.0068 | 1003.1151 | 1983.0072 | 1003.1203 | 1990.0135 | 1003.1255 | 1991.0141 | 1003.1307 | 1992.0106 |
| 1003.1100 | 1980.C80.0082 | 1003.1152 | 1984.0052 | 1003.1204 | 1990.0137 | 1003.1256 | 1991.0143 | 1003.1308 | 1992.0148 |
| 1003.1101 | 1980.C80.0083 | 1003.1153 | 1984.0053 | 1003.1205 | 1990.0138 | 1003.1257 | 1991.0145 | 1003.1309 | 1992.0181 |
| 1003.1102 | 1980.C80.0084 | 1003.1154 | 1984.0072 | 1003.1206 | 1990.0141 | 1003.1258 | 1991.0152 | 1003.1310 | 1992.0191 |
| 1003.1103 | 1980.C80.0085 | 1003.1155 | 1989.0010 | 1003.1207 | 1990.0144 | 1003.1259 | 1991.0156 | 1003.1311 | 1992.0192 |
| 1003.1104 | 1980.C80.0089 | 1003.1156 | 1989.0072 | 1003.1208 | 1990.0154 | 1003.1260 | 1991.0168 | 1003.1312 | 1992.0194 |
| 1003.1105 | 1980.C80.0090 | 1003.1157 | 1989.0100 | 1003.1209 | 1990.0158 | 1003.1261 | 1991.0171 | 1003.1313 | 1992.0204 |
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| 1003.1109 | 1980.C80.0100 | 1003.1161 | 1989.0162 | 1003.1213 | 1990.0169 | 1003.1265 | 1991.0182 | 1003.1317 | 1992.0212 |
| 1003.1110 | 1980.C80.0102 | 1003.1162 | 1989.0168 | 1003.1214 | 1990.0178 | 1003.1266 | 1991.0183 | 1003.1318 | 1992.0218 |
| 1003.1111 | 1980.C80.0105 | 1003.1163 | 1989.0173 | 1003.1215 | 1990.0181 | 1003.1267 | 1991.0185 | 1003.1319 | 1992.0239 |
| 1003.1112 | 1980.C80.0111 | 1003.1164 | 1989.0177 | 1003.1216 | 1990.0182 | 1003.1268 | 1991.0193 | 1003.1320 | 1992.0278 |
| 1003.1113 | 1980.C80.0114 | 1003.1165 | 1990.0009 | 1003.1217 | 1990.0204 | 1003.1269 | 1991.0196 | 1003.1321 | 1992.0280 |
| 1003.1114 | 1980.C80.0116 | 1003.1166 | 1990.0013 | 1003.1218 | 1990.0213 | 1003.1270 | 1991.0212 | 1003.1322 | 1992.0306 |
| 1003.1115 | 1980.C80.0118 | 1003.1167 | 1990.0014 | 1003.1219 | 1990.0216 | 1003.1271 | 1991.0221 | 1003.1323 | 1992.0307 |
| 1003.1116 | 1980.C80.0126 | 1003.1168 | 1990.0018 | 1003.1220 | 1990.0219 | 1003.1272 | 1991.0234 | 1003.1324 | 1992.0311 |
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| 1003.1119 | 1980.C80.0158 | 1003.1171 | 1990.0046 | 1003.1223 | 1990.0226 | 1003.1275 | 1991.0240 | 1003.1327 | 1992.0315.1 |
| 1003.1120 | 1980.C80.0171 | 1003.1172 | 1990.0048 | 1003.1224 | 1990.0229 | 1003.1276 | 1991.0250 | 1003.1328 | 1992.0319 |
| 1003.1121 | 1980.C80.0172 | 1003.1173 | 1990.0051 | 1003.1225 | 1990.0232 | 1003.1277 | 1991.0252 | 1003.1329 | 1992.0321 |
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| 1003.1124 | 1980.C80.0180 | 1003.1176 | 1990.0055 | 1003.1228 | 1991.0103 | 1003.1280 | 1991.0261 | 1003.1332 | 1992.0326 |
| 1003.1125 | 1980.C80.0181 | 1003.1177 | 1990.0068 | 1003.1229 | 1991.0105 | 1003.1281 | 1991.0262 | 1003.1333 | 1992.0341 |
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| 1003.1138 | 1980.C80.0261 | 1003.1190 | 1990.0112 | 1003.1242 | 1991.0122 | 1003.1294 | 1991.0033 | 1003.1346 | 1992.0405 |
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| 1003.1141 | 1980.C80.0280 | 1003.1193 | 1990.0120 | 1003.1245 | 1991.0125 | 1003.1297 | 1991.0052 | 1003.1349 | 1992.0414 |
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| 1003.1147 | 1980.C80.0357 | 1003.1199 | 1990.0127 | 1003.1251 | 1991.0135 | 1003.1303 | 1991.0321 | 1003.1355 | 1992.0437 |
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## PLATES

## Lydian Royal Coinage


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## Hellenistic Coins


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## Seleucid Coinage



Roman Provincial Coinage

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100.1


109.1


111.1

123.1


169.1


176.2


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186.1

191.1



Roman Imperial Coinage


## Late Roman Coinage


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777.1

911.1

## Byzantine Coinage


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1047.1

1263.1


Lead and Other Materials



Figure 1.1 Map of Sardis. See p. xxi for full list of sector abbreviations.

Plate 8


Figure 2.1 Average Annual Coin Loss/ 1000 for cities in the Roman East, Augustus through the Tetrarchy, all cities tested with Chi-Square Goodness of Fit test.


Figure 2.2 Average Annual Coin Loss/ 1000 for cities in the Roman East, Augustus through the Tetrarchy, cities with "normal" profile.


Figure 2.3 Average Annual Coin Loss/ 1000 for cities in the Roman East, Late Roman to Early Byzantine periods, all cities tested with Chi-Square Goodness of Fit test.


Figure 2.4 Average Annual Coin Loss/ 1000 for cities in the Roman East, Late Roman through Early Byzantine periods, cities with "normal" profile.


Figure 2.5 Comparative cities for Average Annual Coin Loss/1000 calculations.


Figure 2.6 Distribution of mints represented in the Sardisexcavation coins, end of the fourth to beginning of the third century BC, with major roads (all maps inclusive of years 1958-2013).


Figure 2.7 Distribution of mints represented in the Sardis excavation coins, ca. 280-200 BC.


Figure 2.8 Distribution of mints represented in the Sardis excavation coins, 200-100 BC.


Figure 2.9 Distribution of mints represented in the Sardis excavation coins, 100-31 BC.


Figure 2.10 Diameters of Herakles/Apollo and Apollo/club coins in millimeters (includes M7 and M13 coins).


Figure 2.11 Weight of Herakles/Apollo and Apollo/club coins in grams (includes M7 and M13 coins).


Figure 2.12 Weights of Seleucid bronze issues from Sardis and Pergamum, compared to Herakles/Apollo and Apollo/club bronzes (after Kritt in Houghton and Lorber 2002, II: 7-9; Hoover suggested the denomination titles).


Figure 2.13 Comparison of diameters of Seleucid and Attalid coins, with Herakles/Apollo and Apollo/club bronzes (the high and low of the Seleucid coins are averages given in Houghton and Lorber 2002; diameters for Attalid coins are taken from the M13 catalog).


Figure 2.14 Distribution of mints represented in the Sardis excavation coins, Augustan era.


Figure 2.15 Distribution of mints represented in the Sardis excavation coins, Julio-Claudian and Flavian eras.


Figure 2.16 Distribution of mints represented in the Sardis excavation coins, first half of the second century AD.


Figure 2.17 Distribution of mints represented in the Sardis excavation coins, second half of the second century AD.


Figure 2.18 Distribution of mints represented in the Sardis excavation coins, 200-270 AD.


Figure 2.19 Percentages of coins from mints of Justin II from the Sardis excavation coins (M1, M7, and M13).


Figure 3.1 Percentage of coins from unstratified (NoEx) and stratified contexts in Sardis (1958-2013).


Figure 3.2 Schematic layout of graves in HoB Mausoleum, with grave gifts and coins.


Figure 3.3 Mean Coin Date of fourth- to early seventh-century deposits: percentage of coins in deposit falling below the MCD (fifth-century deposits in chronological order, from early to end of the century).


Figure 3.4 Percentages of coins by minting date from contexts in MMS/N (eliminating Hellenistic, Roman Provincial, Provincial, and uncertain coins, or those for dates stretching more than one period). For the latest coins and possible intrusions in the deposits, see above, Chapter 3 n .163.


Figure 3.5 Percentages of coins by minting dates from fifth-century hoards at Sardis (for Hoard 2, coins of the first century BC and first century AD have been eliminated from the figure).


[^0]:    5 Grierson 1966, p. v; Reece 2003, pp. 147-48.
    6 Compare de Callataÿ 1995 and Buttrey 1993.
    7 Hopkins 1980.

[^1]:    10 Morrisson 2002, pp. 953-54.
    King 2013, pp. 14, 16, 33.
    12 For the problem in Late Roman deposits, see Butcher 1995, p. 308; Butcher 2001/2, pp. 96-100; also see Reece's pessimism on the number of sites that allow this kind of study (2003, p. 149).
    cf. Wigg-Wolf 2009, pp. 109-10; Doyen 2011, p. 18.
    See Butcher 1995, pp. 308-9.
    Grierson 1966, p. vi.

[^2]:    26 cf. Doyen 2011, pp. 14-15.
    27 Grierson 1965, p. v.
    28 See Reece 2003, pp. 146-47.
    29 See Reece 2003, pp. 147-49, who has used this technique in the west.

    30 As Howgego 1992, p. 4.

[^3]:    31 Although there are several places where the actual numbers of the cities overlap (e.g., 565-685 for Sardis and Priene), the actual numbers are much less useful as evidence than the trend of the numbers over time (e.g., the rise in value for the period).

    32 For AACL/1000 calculations, I did not proportionally divide the "uncertain first to third century AD ," "uncertain fourth," "uncertain fifth," "uncertain fourth-fifth century," or "uncertain Byzantine" coins, as it is clear that the totals for legible coins show a wide variety in the numbers lost within these time periods, and I chose not to mask these differences. I ignored the "uncertain 5th/6th" coins from the earlier excavation report (Buttrey et al. 1981), which does diminish the number of coins from the second half of the fifth century, I am sure.
    33 For an explanation of the test and a program to run the test, see Preacher 2001.

[^4]:    56 Price 1991, p. 39.
    57 Mørkholm 1991, p. 81; see note for coins 8.1-2.
    58 Evans in Berlin and Kosmin, forthcoming.
    59 Thompson 1968, pp. 166, 173.
    60 Houghton 2012, pp. 238-39.
    61 See Hanfmann 1983, p. 113.
    62 cf. Mørkholm 1984, p. 104; Çizmeli-Öğün and Marcellesi 2011, p. 297; Bransbourg 2011, pp. 97-98.

[^5]:    69 Aperghis 2004, p. 117.
    70 Sherwin-White and Kuhrt 1993, pp. 22, 63.
    71 CH IX, 490, Gordion hoard 9. See Çizmeli-Öğün and Marcellesi 2011; they did not break up the Hellenistic period into phases, but noted for Sardis more coins from outside the city in the excavation coins than in the rest of their sample (Ilium, Cyzicus, Assos, Pergamum, Colophon, Priene, Miletus, Aphrodisias, Caunos, Xanthos, Patara, and Side, most of which have small numbers of Hellenistic coins). They attributed the number of foreign mints to Sardis's role as a royal city from the Lydian period into the Hellenistic period, and its role as middleman between coastal and interior cities.

[^6]:    74 In Houghton and Lorber 2002, I: 16-17.
    75 Houghton and Lorber, 2002, II: 7.
    76 Aperghis 2004, p. 223.
    77 Houghton 2012, p. 240.
    78 See Golenko 1993, p. 81.
    79 It is true that the cities of inner Anatolia are less monetized than the western cities, but if trade was occurring to a large degree with the East, we might expect Seleucid coins from farther eastern mints to appear in the Sardis deposits, since we know that they were minted in quantity.
    80 Mørkholm 1991, p. 122; cf. Houghton and Lorber 2002, I: 184.

[^7]:    81 Houghton and Lorber 2002, I: 255-57.
    82 Also M7 GR 390.
    83 See Ma 1999, pp. 57-58, 61.
    84 The eagle "may reveal Ptolemaic influence," Mørkholm 1991, p. 126.

[^8]:    85 Houghton and Lorber 2002, no. 983(6).
    86 M7 GR 376-378, based on Newell 1941, no. 1438; cf. Bell 1916, nos. 405-411.

    Houghton and Lorber 2002, I: 375-76.
    88 Houghton and Lorber 2002, I: 207.

[^9]:    89 Houghton and Lorber 2002, I: 186-89, 243-44.
    90 Ma 1999, pp. 61-63, 110, 131, basing his arguments on Gauthier 1989; Thonemann 2013, p. 23.
    91 See Stinson in Berlin and Kosmin, forthcoming.
    92 Magie 1950, p. 42; Ma 1999, pp. 114-15.
    93 Berlin, Final Hellenistic Pottery Report 2013, p. 13; Berlin in Berlin and Kosmin, forthcoming.

[^10]:    94 Voegtli et al. 1993.
    Thonemann 2013, pp. 17-19.
    Berlin 2016, p. 353.
    Citing von Fritze 1910, pp. 475-84; Buttrey et al. 1981, p. 74.

[^11]:    98 MacDonald 1976, p. 44, who used only the information from the earliest publication of the coins of Sardis; these results were also noted by Çizmeli-Öğün and Marcellesi 2011, p. 313.
    99 See Kroll 1993.
    100 Voegtli et al. 1993, p. 6-7.
    101 I am grateful for the chance to discuss the problems of Hellenistic Sardis with a group of scholars in the summers of 2014 and 2015, who were invited to Sardis by Nick Cahill: Andrea Berlin, Ruth Bielfeldt, Paul Kosmin, and John Ma. They provided stimulating insights and suggestions to further my arguments, as did the audience during the 2015 International Numismatic Congress in Taormina, Sicily and the Hellenistic Sardis group in fall 2016.

[^12]:    113 Magie 1950, p. 136.
    114 Dmitriev 2005, pp. 34-43.
    115 Hence, the arguments over the date when the city became a polis: see Ma 1999, p. 250; Sherwin-White and Kuhrt 1993, pp. 182-83; Magie 1950, pp. 121-22.
    116 Dmitriev 2005, pp. 65, 296; cf. Mørkholm 1984, p. 102.
    117 Martin 1985, pp. 220-21.

[^13]:    118 e.g., Cox 1950, p. 47-48.
    119 Newell 1941, pp. 398-99.
    120 Martin 1985, p. 234.
    121 See Martin 1985, pp. 235-38; cf. Seyrig 1986, pp. 19-22, $35-38$, although he was only concerned with precious-metal coins.

    122 Mørkholm 1984, pp. 101-2.
    123 Martin 1985, pp. 238-40; Meadows 2001, p. 59.
    124 Meadows 2001, p. 59.

[^14]:    135 Westermark 1991, pp. 148-49, 152; but the excavation coins she lists fall below this theoretical weight.
    136 At Sardis the mean is 3.15 g , while Westermark (1991, p. 152) found it to be averaging 3.97 g .

[^15]:    137 Mørkholm 1984, p. 97.
    138 Johnston 1983, p. 60.
    139 Houghton and Lorber 2002, nos. 974-975; cf. nos. 976A-978.
    140 Compare the oak wreath on a third-century BC coin from Smyrna, BMC Ionia, p. 237, no. 3, and the parsley wreath on RPC I, no. 1141.

[^16]:    141 See Mitchell 1990, p. 185.
    142 Houghton and Lorber 2002, no. 445.
    143 Houghton and Lorber 2002, no. 1082.
    144 SNG France 2, Cilicie 1279.
    145 SNG Cop 16.
    146 BMC Ionia, p. 152, nos. 8-9, 11
    147 BMC Caria, p. 10, no. 1, cf. nos. 3-7.
    148 Imhoof-Blumer 1901, p. 106, nos. 2-3.

[^17]:    149 Bronze coins of Heraclea in Bithynia also show a young Herakles, with a laurel wreath and lionskin knotted around his neck on their obverses (BMC Pontus, p. 142, nos. 28-29), dated 338-306 BC.

    150 Griffin 2004. I am grateful to Paul Kosmin for the suggestion of the hawk; he also noted that the bird may refer to Antiochus Hierax, although the use of the bird continues long after the death of Hierax.

[^18]:    151 Ashton 2012, p. 199. Frey-Kupper (2013) now has a series with a wreath around the reverse type, dated ca. 190 BC, from her meticulous work in Sicily; I thank her for our stimulating discussion on the problem of the civic mint at Sardis. I also appreciate the comments of Peter van Alfen and the students at the 2014 ANS Graduate Summer Program.

    BMC Troas, p. 96, no. 9.
    153 BMC Lydia, p. 44, nos. 20-23.

[^19]:    166 See Ma 1999, pp. 43-50 for an assessment of the period; $\mathrm{Ma}(\mathrm{p} .47)$ suggested that the civic coins were minted after 226, when Sardis "escaped Seleukid authority . . . as [an] 'autonomous' city under the Attalids." Sherwin-White and Kuhrt (1993, pp. 182-83) had already suggested that there was a "brief period of independence from Seleucid rule in ca. 226-224, which is thought to be indicated ... by the minting of independent silver coins." Note that Cox (1950, p. 47) proposed autonomous coins were produced in Antioch during the reign of Seleucus IV or even Antiochus III, when there was an intense need for small change.

    167 Two control marks are paralleled on one silver coin and one bronze of Seleucus II and the Herakles/Apollo coin (no. 52.19); cf. Houghton and Lorber 2002, nos. 654 (5), 655 (1); and M13 no. 55.6; cf. Houghton and Lorber 2002, no. 657 (1).

    168 Johnston (Buttrey et al. 1981, pp. 80-81) provided comparanda of moneyers' names and names of local dignitaries in Sardis; several are dated to the first century BC. The Sestus inscription is a terminus post quem of when magistrates' names

[^20]:    176 Buttrey et al. 1981, p. 80.

[^21]:    181 Burnett 2011, pp. 2, 6, 8; Katsari 2011, pp. 225-26; Amandry 2012, pp. 394-99.

    182 Harl 1996, p. 108; Dmitriev 2005, p. 305; Katsari 2011, p. 213.
    183 See Mitchell 1993, p. 242; Mitchell and Katsari 2005, p. xxvi; Katsari 2011, p. 220; Burnett 2011, p. 2.

    184 Harl 1997, pp. 24-25; cf. 1996, pp. 108, 240.
    185 Johnston 2007, p. 242.
    186 Katsari 2011, p. 214.
    187 Economic historians of the Roman period still emphasize the importance of the army in terms of demand for bronze coins,

[^22]:    but this cannot be a reason for the Sardis mint to coin bronzes; see Mitchell 1993, p. 255; Ziegler 1996, p. 121; Katsari 2005, pp. 261-62, 267. I will address this issue in the third-century coinages, in Section 2.4.

    188 Katsari 2011, p. 225; Amandry 2012, pp. 395, 398.
    189 Burnett, Amandry, and Ripollés 2005, p. 487.
    190 Johnston 1983, p. 60.
    191 Burnett, Amandry, and Ripollés 2005, p. 488.
    192 Johnston 2007, p. 3; Spoerri Butcher 2009, pp. 223-24; Burnett 2011, p. 2.

[^23]:    193 Buckler and Robinson 1932, no. 8, pt. 1.
    194 Burnett, Amandry, and Ripollés 2005, p. 487.
    195 Burnett, Amandry, and Ripollés 2005, no. 2990 and p. 487.
    196 It is not a Hellenistic issue, given the style of the head and the use of the ethnic on the obverse. The names that appear on the coins may not be magistrates, as Burnett points out. Without a designation they may only point out who was responsible for paying for the issue; eponymous magistrates; or simply a "wider mixture of people drawn from the city élites" (2011, p. 4). We know that Mousaios was a strategos in 5 BC, but we have no corresponding information about Opinas or Akiamos.

[^24]:    197 e.g., MacDonald 1976, p. 25.
    198 Burnett 2011, p. 27.
    199 Johnston 2007, pp. 5-6 and n. 22.
    200 Burnett, Amandry, and Ripollés 2005, p. 380.

[^25]:    208 Katsari 2011, pp. 191-92.

[^26]:    216 Hanfmann 1983, pp. 142-45; cf. Dzielska 1986, pp. 38 n. 59, 54 n. 6.

    217 Zuiderhoek 2009, pp. 66-67.
    218 Cahill and Greenewalt 2016, p. 501.
    219 As is normal for a neokorate temple: these temples are not erected with euergistic funds, but the city may have received some contributions from other cities in the conventus. See Cramme 2001, p. 56; Burrell 2004, pp. 3, 313; Heller 2006, pp. 180-82; Evans 2015, pp. 486-87.

    220 Hanfmann 1983, p. 145; Cahill and Greenewalt 2016, pp. 502-4; for more honorary inscriptions of the second century, see Petzl, forthcoming.

[^27]:    234 Greenewalt et al. 1985, p. 79; Yegül 1986, pp. 5-6, 12-13, 69, 146.

    235 For municipal competition for these titles, see Heller 2006; Amandry 2012, p. 401.
    236 Hanfmann 1983, p. 145; Evans in Berlin and Kosmin, forthcoming.

[^28]:    247 Katsari 2003; 2005, p. 275; Johnston 2007, pp. 8, 242.

[^29]:    256 Butcher 1988, p. 24.

[^30]:    262 See Katsari 2005, pp. 272-73; Bland 2012, pp. 515-16.
    263 Bland 2012, p. 528.
    264 M7 R 28ff; no. 241ff; cf. Katsari 2011, p. 156 chart 29; Bland 2012, pp. 519-20.
    265 Buttrey et al. 1981, p. 135 n. 93.
    266 Buttrey et al. 1981, p. 94; Bland 2012, pp. 526-27.

[^31]:    267 Marcus Rautman is preparing a monograph on the Late Roman houses; I thank him for his work with me in understanding the fourth through sixth century at Sardis. In keeping with numismatic tradition, I will consistently refer to the fourth and fifth centuries as "Late Roman" and not "Early Byzantine."

    268 For a summary, see Hanfmann 1983, pp. 146-48, and more recently, Rautman 2011.
    269 Foss 1976, pp. 4, 31-32; Rautman 2011, p. 8.
    270 Kaçar 2005.
    271 Foss 1976, p. 8.
    272 Rautman 2011, p. 13.
    273 Foss 1976, pp. 8, 35-47.
    274 Yegül 1987, p. 47.

[^32]:    275 Seager 1974; Magness 2005 preferred a sixth-century date.

[^33]:    308 To which we can add Sagalassus: although the coins excavated since 2004 have not been published, Stroobants and Poblome (2015, p. 78) noted that the number of coins on the site peak in the period 388-408, which is mirrored in the excavation results from Hierapolis, Perge, Side, and Amorium.
    309 Safrai 1998.
    310 Guest 2012. Butrint is the exception to the rule: Moorhead reported that "this analysis shows that . . . coin supply was the highest in the period 445-98 and that the greatest coin loss occurred in the second half of the fifth century and well into the sixth century" (Moorhead 2007, p. 291). He specifically noted the contrast to the picture of fifth-century Sardis (p. 292).

[^34]:    313 Bijovsky 2012; Moorhead 2012, p. 622.
    314 Illegibles are called fifth/sixth century, since Buttrey placed the end of the minting of Anastasius I's nummi in 518 (see M7 R 1117; the totals of legible coins in his Table 8 was reduced, as his Valentinian I-Valentinian III group is composed partly of fourthcentury coins).

[^35]:    317 Bijovsky 2012, pp. 76-77, 130-56; Moorhead 2012, pp. 62224; Guest 2012, p. 118.
    318 Adelson and Kustas 1960, p. 142.
    319 Adelson and Kustas did note as well the presence of clipped AE4s in the hoard they were studying.

    320 Kent 1994, p. lxxxvii; cf. Moorhead 2007, pp. 296-97.
    321 Buttrey et al. 1981, p. 119; Kent 1994, pp. 90-92, 98, 105-8, 115, 119-21; Arslan 2003, p. 37.

    322 Guest 2012, p. 120.
    323 Moorhead 2007, pp. 292, 294.
    324 Butcher 2001/2, pp. 98-100.
    325 Butcher 1995, p. 305.
    326 Knapp and MacIsaac 2005, p. 185.

[^36]:    327 Reece 1984a, p. 174.

[^37]:    330 Gândilă 2009, p. 167.
    331 Burrell 2007.
    332 The AACL/1000 for second half of the fifth century is artificially suppressed for Kenchreai, but Hohlfelder (1973) listed 257 coins as LR/EB, so there was no good way of subdividing the material.

    333 Moorhead 2007, p. 295.
    334 See Ambraseys 2009, pp. 189-92.
    335 Koder 1996.
    336 Almost everything about this plague is disputed, from the nature of the plague to the mortality effects it had on urban dwellers: see Horden 2005; cf. Whittow 1996, pp. 66-68; Sarris 2011, pp. 143, 158.

[^38]:    337 Laiou and Morrisson 2007, pp. 38-39; Haldon et al. 2014.
    338 Morrisson and Sodini 2002, p. 189; cf. Morrisson 2002, p. 955; Laiou and Morrisson 2007, p. 40. I will not attempt to give an exhaustive bibliography about the "demise" of, or the permanent changes that are visible in the city in the Early Byzantine period, a problem that has recently been discussed by various authors in Christie and Loseby 1996 and Brogiolo and Ward-Perkins 1999, among many others.

    339 Whittow 1996, pp. 59-63.
    340 Foss 1976, pp. 41-52; cf. Foss and Scott 2002, pp. 615-17.
    341 Rautman 2011, esp. p. 24.
    342 Scott 1987, pp. 77-80.
    343 Morrisson and Sodini 2002, p. 189.

[^39]:    344 Hahn 2000, p. 8; cf. Lightfoot 2002, p. 239.

[^40]:    350 Hahn 2000, p. 5.
    351 Gândilă 2009, p. 168.
    352 Gândilă 2009, p. 168.
    353 Gândilă 2009, pp. 169-70.

[^41]:    354 Gândilă 2009, p. 169.
    355 Gândilă 2009, pp. 170-71.
    356 Gândilă 2009, pp. 171-72.

[^42]:    363 Gândilă, 2009, pp. 182-83.
    364 Gândilă 2009, p. 183.
    365 See nos. 1130.1; 1137.1; 1141.1; 1165.1; 1176.1; 1178.2; 1184.1, 4, 5, 9; 1186.1; 1195.1; 1203.1; 1204.1-5; 1206.1; 1207.1-2; 1208.2; 1211.1; 1212.1; 1214.1; 1218.1; 1220.1; 1221.1-2; 1223.1; 1227.1; 1233.2; 1235.1; 1238.1; 1242.1; 1243.1; 1245.4; 1250.1; 1252.2-3.

    366 Gândilă 2009, pp. 173, 187.
    367 Gândilă 2009, p. 177.

[^43]:    372 Laiou and Morrisson, 2007, pp. 40-41.
    373 Laiou and Morrisson, 2007, p. 86.
    374 Morrisson 2002, p. 913.
    375 See Charanis 1972/3, pp. 177-80.
    376 Foss 1975; cf. Foss and Scott 2002, pp. 615-17.
    377 Hanfmann (1983, p. 161) did not mention burned levels in the Bath-Gymnasium Complex, nor are any burned levels noted for this period in the House of Bronzes. See the warning by Cormack (1990, p. 28) that Foss's theory has become too quickly canonical history.

    378 Foss 1975, p. 20.

[^44]:    402 Harvey 1989, p. 21; Morrisson 2002, p. 960; Laiou and Morrisson 2007, p. 88; cf. Ivison 2012, p. 64.

    403 Scott 1987, p. 82; Foss and Scott 2002, pp. 618-19.
    404 Foss 1976, pp. 56, 66; cf. Foss and Scott 2002, p. 620.
    405 Foss 1976, pp. 61, 66-72; Scott 1987, p. 82.
    406 Laiou and Morrisson 2007, p. 89.
    407 Laiou and Morrisson 2007, pp. 147-51.

[^45]:    408 Voegtli et al. 1993, p. 9.
    409 Laiou and Morrisson 2007, pp. 90-93, 160; cf. Harvey 1989, pp. 56-57.

    410 Buchwald 2015, p. 99; cf. Scott 1987, p. 84; Foss and Scott 2002, p. 620.

[^46]:    3 Evans 2013a and, more briefly, Reece 1993.
    4 See Butcher 2001/2, p. 29.

[^47]:    8
    See Gerrard 1993.

[^48]:    9

    Ellis 2017, p. 316.
    Rick 1976.
    Butcher 1995, p. 308.
    Reece 2003, pp. 150-51.
    cf. Grierson 1966, p. xii.
    e.g., Buttrey et al. 1981, p. xvii.

[^49]:    15 Adkins, Perry, and Evans 1989; also Nielsen 1991; Andrews 2006; cf. Canti 2003.

    Schiffer 1996.
    Grierson 1965, p. xi, specifically about Sardis.

[^50]:    18 Grierson 1966, p. vi; Grierson 1986.
    19 Gândilă 2009, p. 156.
    20 This includes the Byzantine coins in Bates 1971, Buttrey et al. 1981, and the current excavations: 1783 coins, of which 856 are folles or half-folles.

    22 Stroobants and Poblome 2015, p. 78.
    23 Moorhead, Gjongecaj, and Abdy 2007, p. 78.

[^51]:    24 MacDonald 1976, p. 27.
    25 Lightfoot 2002, p. 235.
    26 In Sardian parlance, unexcavated coins are given the designation "NoEx." I have rejected some of the "NoEx" coins handed in to the excavation as problematic, since they appear to me to be modern fakes.

    Voegtli et al. 1993, pp. 7, 9.
    Moorhead, Gjongecaj, and Abdy 2007, pp. 78-79.

[^52]:    40 Cahill et al., forthcoming.
    41 Cahill et al., forthcoming.
    42 Bellinger 1968.
    43 See Wallace 2016, who suggested an accession in the 580s $B C$, hence the range of dates given in the catalog.
    44 The coin of Miletus, no. 6.1, was turned in to the excavation during the summer when the soldier was being excavated, and was said to have been found in the debris. Cahill has asked me to designate the coin as NoEx due to these circumstances.
    45 Cahill and Kroll 2005; also Velde in de Callataÿ 2013, p. 13; contra Carradice 1987.

[^53]:    46 Naster 1976, p. 131; see Robinson 1958, pp. 188-89; Price 1983, p. 8, no. 9; Carradice 1987, pp. 91-92; Alram 2012, p. 63.

    Alram 2012, p. 63.
    Cahill 2011, p. 360.
    Walburg 1991, p. 14.
    Bruce 2015; Hanfmann 1962, p. 22.
    Konuk 2012, p. 55.
    cf. Konuk 2005.

[^54]:    57 One envelope in particular showed her thinking as "Pergamon? large helmeted head of Athena r., rev. very rotten," then "Seleucid?" was crossed out and replaced with "Alex III etc?," and as a consequence, she placed the coin in the illegible Hellenistic category. When the coin was re-cleaned, it could be read as a head of Herakles on the obverse, with (part of) a horse and rider on the reverse. I must note that Johnston was working when the Sardis depot had no electricity. I have the benefit of strong raking electronic light and microscopes.

[^55]:    65 Cahill 2011, pp. 359-60.
    66
    67 e.g., Vann 1976, pp. 99-103.
    68 Cahill 2010, pp. 63-64.
    69 Greenewalt 2008, pp. 373-75; Cahill 2010, pp. 63-64; Cahill 2012, p. 212.

[^56]:    70 Von Fritze 1910, pp. 22-23; SNG Tübingen 4: nos. 23732375.

    71 Buttrey et al. 1981, pp. 19, 74.
    72 Westermark 1991, no. 8; cf. Chameroy 2012.

[^57]:    73 Plautus, Poenulus 5-10 pleads with the audience to remain in their seats instead of visiting the snack vendors.

    74 Hanfmann 1983, p. 116; Cahill 2010, pp. 63-64.

[^58]:    75 e.g., Head 1908.
    76 Berlin, Compiled Report 2015, p. 36.
    77 ByzFort 84.8 Basket 76, no Lot; Ratté, Final Field Report: SEBF 1984, p. 6).
    78 ByzFort 84.5 Basket 13, no Lot; cf. Fieldbook SEBF 84 I: 67.

[^59]:    79 Field 49 09.1 Basket 61 Lot 60 . See also Field 49 09.1 Basket 67 Lot 62, an occupation layer with a Sardis civic coin dating 245/220 to the second century BC (Herakles/Apollo no. 52.33) and an uncertain Hellenistic coin dating from the late fourth century to the first century BC (no. 94.70). The excavator thought that the fill dated to the Hellenistic era (Souza, Final Field Report: F49 09.1, p. 5), but thought the pottery needed more analysis.

    80 MD2 96.1 Basket 13 Lot 41.

[^60]:    81 Pottery read by E. DeRidder Raubolt; Fieldbook MD2 96.1 I: 66-70.

    82 The Roman as was given to Basket 12, Lot 40 "Late Roman Fill"; it also contained an illegible Roman Provincial coin (no. 230.89) and a late fourth-century AD coin (no. 765.1).

    83 The layer that the coins were found in rested on top of the bedrock; there are no later coins found in this layer, but the pottery was not reported (Gürtekin, Final Field Report: SEBF 91.17, p. 6).

[^61]:    86 Poblome 2008, pp. 194, 198; cf. Poblome 1995; Stroobants and Poblome 2015.

    87 Poblome 2008, pp. 195-96; see also Travaglini and Camilleri 2010, p. 8, who find the same for Hierapolis levels.

    88 Poblome 2008, pp. 198, 202.

[^62]:    89 DeRidder Raubolt provided me with information about the pottery in the deposit.

[^63]:    91 Burnett, Amandry, and Ripollés 2005, p. 488.
    92 Burnett, Amandry, and Ripollés 2005, p. 418.
    93 I am not sure we should set much weight on the obliteration of the Roma reverse, in part because the head of the Sacred Senate-which is the Senate in Rome-was left intact, as was the head of Nero. It is thus difficult for me to see the repurposing of the coin reverse as an anti-Roman statement; the depositor needed an image that referred to Cybele, and there was no coin available to fulfill this need.

[^64]:    94 I know of only one denarius and one copper-alloy coin that were flattened on one side and engraved, though with inscriptions, not figural work: see Bonner 1950.

    95 Copper-alloy coins are fairly common as votive objects. A peculiarly apt parallel comes from another site I helped excavate, Javols (Languedoc-Rousillon). Beneath a large stone possibly serving as a statue base, we found a life-size bronze hand, a pig skull, a pitcher, a roof tile, and a second-century AD copper-alloy coin (Evans, Ferdière, and Marot 2009, p. 266). It was clear that the deposit was made when the statue was dismantled; the ancient inhabitant buried this hoard to turn away any misgivings the goddess may have had by the destruction of her statue.

[^65]:    98 Greenewalt 2004, p. 482; 2006, p. 176; 2007, pp. 743-44; Cahill 2015, pp. 421-22.
    99 The terrace fill was dug in 2002 and 2004 (Greenewalt 2006, p. 176). For the Julio-Claudian date of the Temple, Stinson and Yildırım, pers. comm.; information about the lots that formed the terrace fill; Cahill, pers. comm.

[^66]:    to the Hadrianic period: Burrell 2004, pp. 100, 102; Hanfmann 1983, p. 145. Johnston (1983, p. 60) suggested Antoninus Pius.

    103 Evans 2015, p. 487.

[^67]:    104 William Metcalf (pers. comm.) noted that the temple shown on the coin may also have been a neokorate temple in Nicomedia. One example comes from a tomb in Nempont-Saint-Firmin (France), although it dates to the fourth century; see Duchemin 2012, fig. 11.

    105 Clay 1989.

[^68]:    106 See note on coin no. 98.6.
    107 Kiernan 2001, pp. 18, 27, 29.
    108 Wigg-Wolf 2005, pp. 371-72.
    109 Mary E.H. Walbank, pers. comm.; for the final publication on the tombs, see Slane 2017.

    110 Duchemin 2012, pp. 160-72.

[^69]:    116 Rotroff and Oliver 2003, pp. 196-97.
    117 Rotroff and Oliver 2003, pp. 189-90.
    118 Rotroff and Oliver 2003, pp. 187-89.

[^70]:    119 As reported in Bell 1916, no. 226, there dated to the Flavian period; found in this phase of the cemetery but not in a surviving grave were two more examples of the type: C67.0488, and C67.0659.

    120 The use of specific coin types in burials has been attested elsewhere in the Roman world. In a cemetery in Avenches, dating from the second half of the first to the early third century, depositors chose coins with the reverses of Salus, Felicitas, Pax, or Roma (Koenig 1999, pp. 456-58).
    121 Two more Early Imperial coins were not associated with particular graves in the AhT cemetery, but they must belong to the same phase of use in the cemetery, and perhaps once did belong to graves: C67.0037, a copper-alloy coin from Pergamum with Demos and Silvanus on the obverse and a tetrastyle temple on the reverse, dated 4 AD or later (RPC I: 2364); and C67.0635, a Flavian issue from Sardis, Athena/tetrastyle temple (RPC II: 1306), wrongly identified in the coin register, but identified as such by Johnston on the coin envelope.

[^71]:    125 Foss 1976, pp. 43-44; Hanfmann, Mitten, and Ramage 1968, pp. 10-11.

    126 Rautman, Roman Pottery Final Report 2013, p. 3.

[^72]:    127 Rautman, Roman Pottery Final Report 2013, p. 3.

[^73]:    128 "Shear's Tomb" in Corinth provides a parallel. This was a tomb built in the second century, with burials placed in the tomb into the fifth or sixth century. Coins minted between the first and fourth centuries were found with the burials, but no fifth-century coins-and especially no large scattering of coins-were found in the latest burials (Walbank and Walbank 2015).

    129 Hanfmann 1983, p. 208, no. 5.
    130 Hanfmann 1983, p. 206.
    131 Hanfmann 1983, p. 208, no. 7.

[^74]:    136 For an overview of the Late Roman Townhouse, see Rautman 1995b. Although I am aware that King's research (2013, pp. 14, 16, 33) suggested that 11 or more coins were needed for an analysis, Rautman has only been able to isolate a few fourth-century deposits; I thank him for providing me with these contexts. The evidence of these small deposits should be used with caution.
    137 Greenewalt and Rautman 2000, p. 645.
    138 Rautman 1995b, p. 57.

[^75]:    146 The calculation of the MCD without the second-century and third- to early fourth-century coin produced a marginally different number (339), with $51 \%$ of the coins falling before that date.

[^76]:    147 Coins of the second half of the fourth century were gathered into a small hoard found near the Artemis Temple by Bell (1916, p. viii); the hoard closed around 400. As recorded by Bell, this hoard has the normal profile of a hoard (see below).

[^77]:    148 I am indebted to Rautman for providing me with the list of Lots and Baskets that make up this deposit.

    149 Greenewalt, Sterud, and Belknap 1982, p. 17, where fifthcentury coins are noted on top of the mosaic, helping to date it. However, there are discrepancies among the fieldbook, the final report, and the published version, so the coins cannot provide a reliable terminus ante quem for the deposit. For the coins in the metaling, see Harward, Final Field Report: MMS/N 78.1, p. 11. For 79.1, Rautman, pers. comm. For 90.1, this deposit was not sieved (Umholtz, Final Field Report: MMS/N 90.1, p. 3); for locus numbers, see Rautman, Revised Coin List Report 1995. For 91.1, Fieldbook MMS/N 91.1 I: 81-89.

[^78]:    152 Rautman 1995b, p. 59; Greenewalt, Rautman, and Cahill 1988, pp. 57-59.

[^79]:    161 Greenewalt, Rautman, and Cahill 1988, p. 57.

[^80]:    164 Rautman is preparing the final report on the area; the following is a preliminary list of coins from the deposit. Since the current monograph examines coins only up to and including the 2013 season, I will be publishing in the future a deposit of coins in Field 55, also from the seventh or eighth century. For 78.1, Harward, Final Field Report: MMS/N 78.1, p. 10; cf. MMS/N 78.1 II: 79, 87 for coins not included in the final report, but found in the tile fall. For 89.1, Rautman, Final Field Report: MMS/N 89.1, pp. 24-25. For 90.1, Rautman, Revised MMS/N 1990 Coin List Report 1995, p. 1-2. For 92.1, Fieldbook MMS/N 92.1 I: 4. For 94.1, Chabot, Final Field Report: MMS/N 94.1, p. 36; Fieldbook MMS/N 94.1 I: 2.

[^81]:    167 cf. Maguire 1997, p. 1040.

[^82]:    168 A version of this blessing was found on an ampulla in MMS/S (P95.046; see Greenewalt and Rautman 1998, p. 486), though it is not, as Fulghum wrote, "an inscription . . . from the entrance of a late Roman house at Sardis" (2001, p. 141).

    169 Fulghum 2001, p. 147.
    170 cf. Fulghum 2001, p. 147.
    171 Russell 1995, p. 48 n. 37, noting that they were found only in tombs, not the settlement, in Beth Yerath.

    172 Maguire 1997, p. 1044 (quoting Michael Italikos).
    173 NoEx or surface coins: L13 (seal), Augustan-era coin (no. 28.2), Salonina (no. 120.1), Gallienus (no. 264.1), and Theodosius (no. 752.1).

[^83]:    180 Burrell 2007, pp. 253-54.
    181 cf. Moorhead 2012, p. 622.
    182 Burrell 2007, p. 235.

[^84]:    183 Published in full in Evans 2013b.
    184 Buttrey et al. 1981.
    185 Published in full in Evans 2013b; mentioned in Burrell 2008, p. 166; Greenewalt, Ratté, and Rautman 1995, pp. 24, 35, no. 15.

    186 Published in full in Evans 2013b; mentioned in Burrell 2008, p. 166; Greenewalt et al. 1990, p. 140.

[^85]:    187 Published in full in Evans 2013b.
    188 Grierson 1975, p. 131.
    189 Published in full in Evans 2013b.

[^86]:    194 Kent 1994, pp. lxxxvi-lxxxvii.
    195 As, e.g., Hohlfelder 1973, p. 91, no. 6.
    196 See Bijovsky 2012, pp. 458-60; Butcher 2001/2, p. 281.

[^87]:    Buttrey et al. 1981, p. 72.
    Howgego 1985, p. 2
    Bellinger 1968.
    Konuk 2012, p. 47.
    Buttrey et al. 1981, p. 20, nos. 39, 49 noted the presence of

[^88]:    owl countermarks on coins of Pergamum, but on different series than are presented here.

    For a parallel, see SNG France 5: 1695.
    BMC Mysia, p. 132, nos. 190-204.
    BMC Mysia, p. 131, nos. 183-188.

[^89]:    11 Houghton and Lorber 2002, II: 51
    Mørkholm 1991, p. 126.
    Houghton and Lorber 2002, II: 65.
    Howgego 1985, p. 3; Johnston 2007, p. 6.

[^90]:    Buttrey et al. 1981, p. 72; Howgego 1985, pp. 10, 43, 214-16.
    Buttrey et al. 1981, p. 72; Howgego, 1985, pp. 43-44.
    See Howgego 1985, Map 12; Johnston 2007, pp. 15, 20, 95.
    Johnston 2007, p. 95 and p. 21, Table 2.
    Johnston 2007, p. 95.
    See Johnston 2007, Tables 2 and 4b.
    Howgego 1985, p. 216.
    Johnston 2007, p. 95.

